

AQUA EFFICIENCY TAP WATER MODULES

USER MANUAL

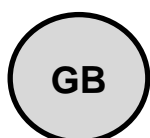


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INSTALL AQUAEFFICIENCY UNIT

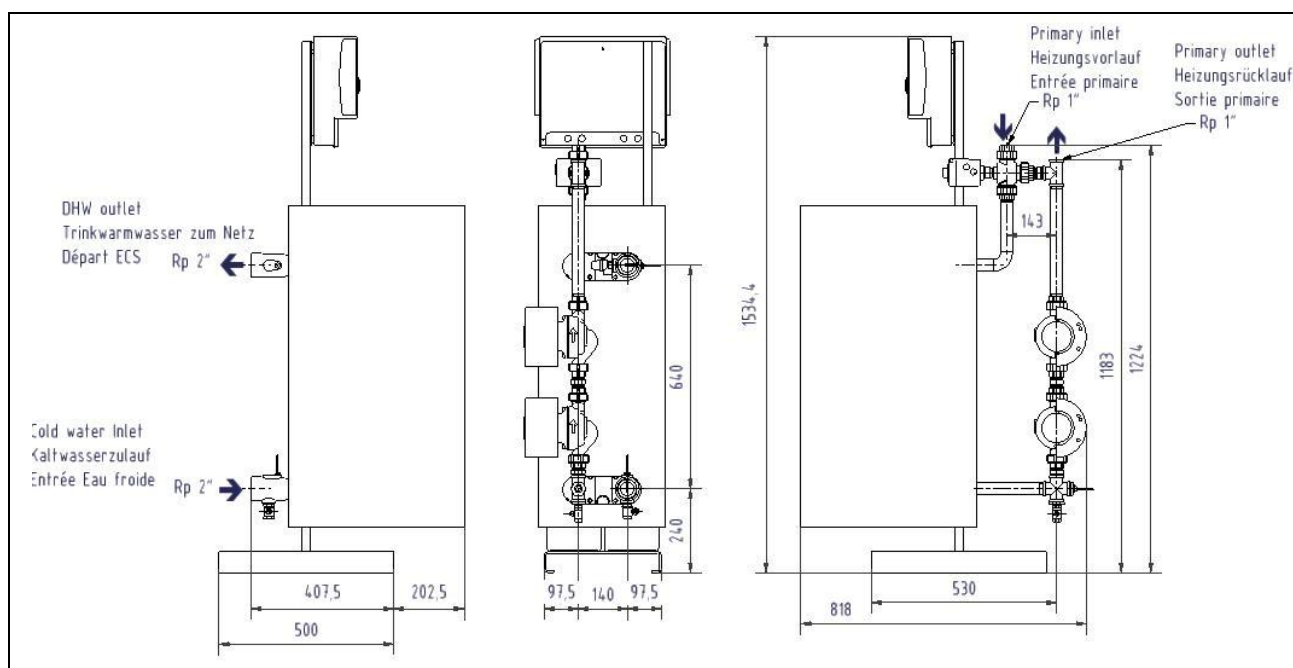
Our tap water modules are designed for indoor installation in plant rooms where the ambient temperature should always be above 0°C. Max ambient temperature : 40°C. Max. hyg : 85% without condensation



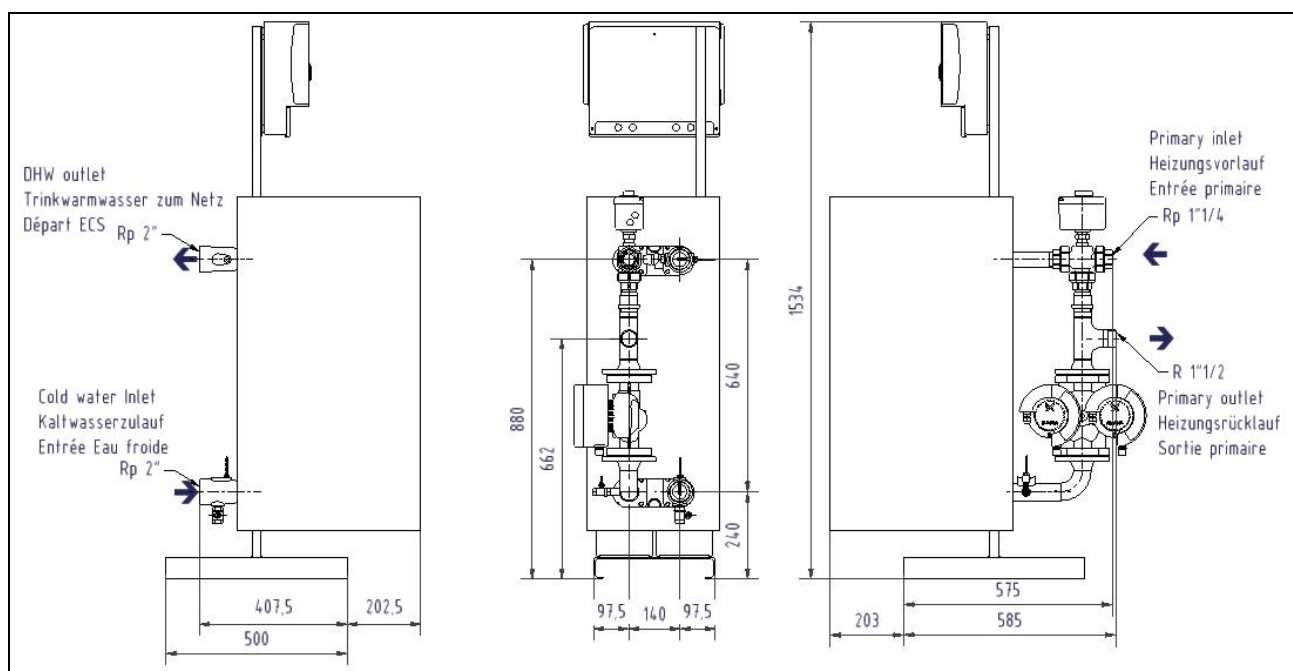
When handling the unit, make sure the actuator or piece of wire are not damaged or stressed.

Dimensions and connection diameters are indicated on the following drawings :

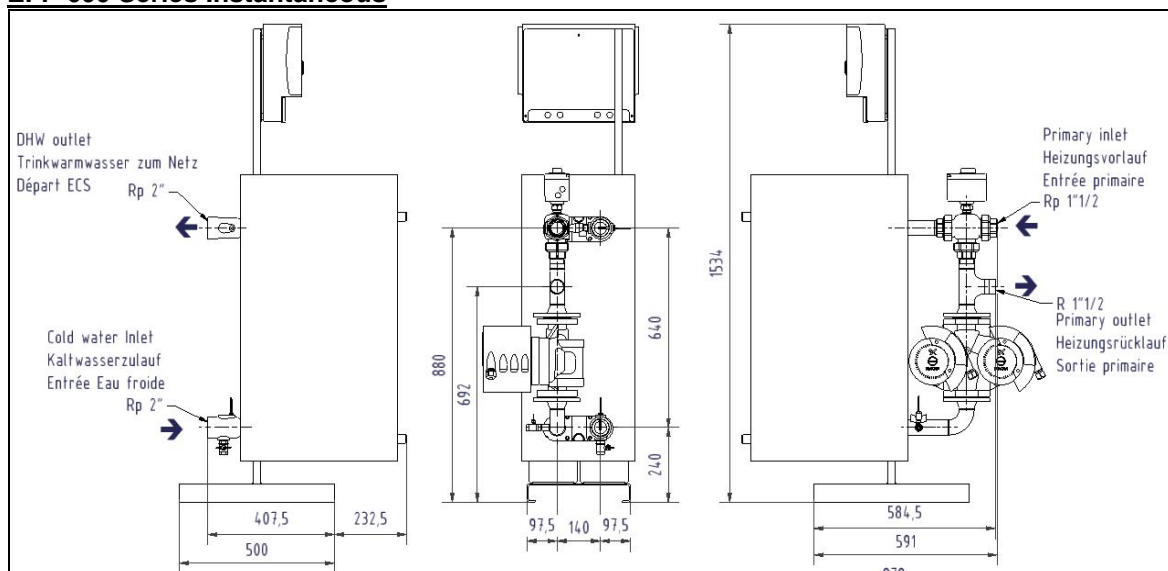
EFP 200 Series Instantaneous



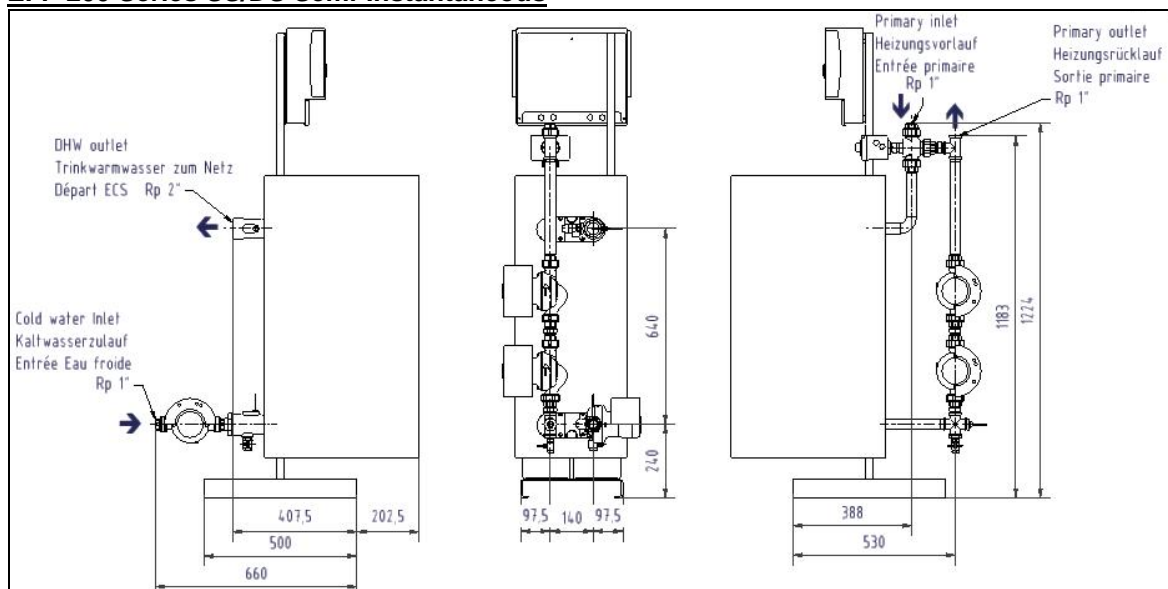
EFP 400 Series Instantaneous



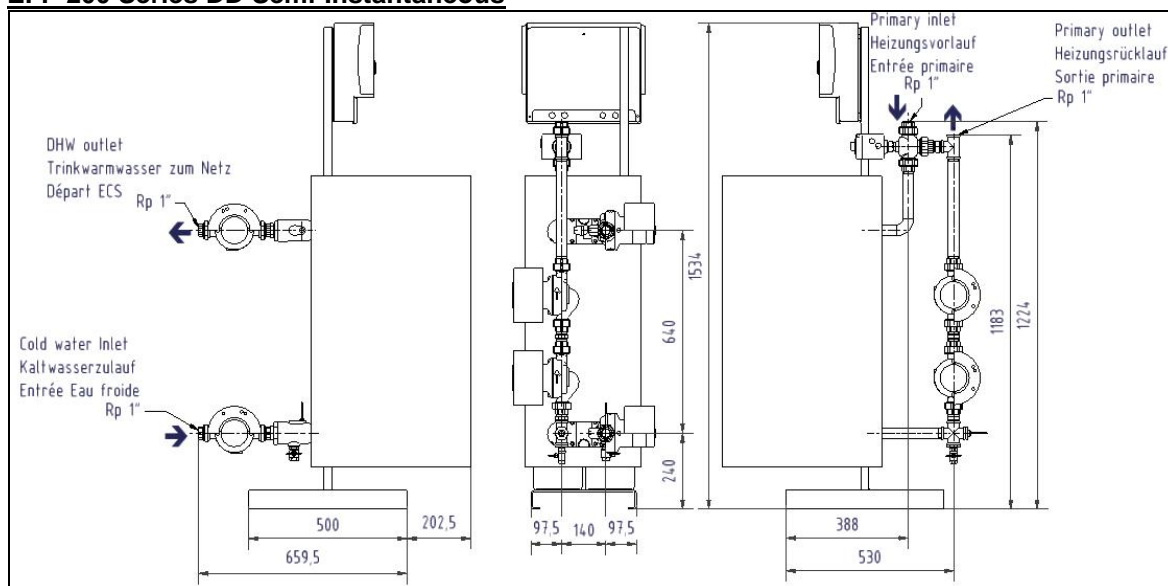
EFP 600 Series Instantaneous



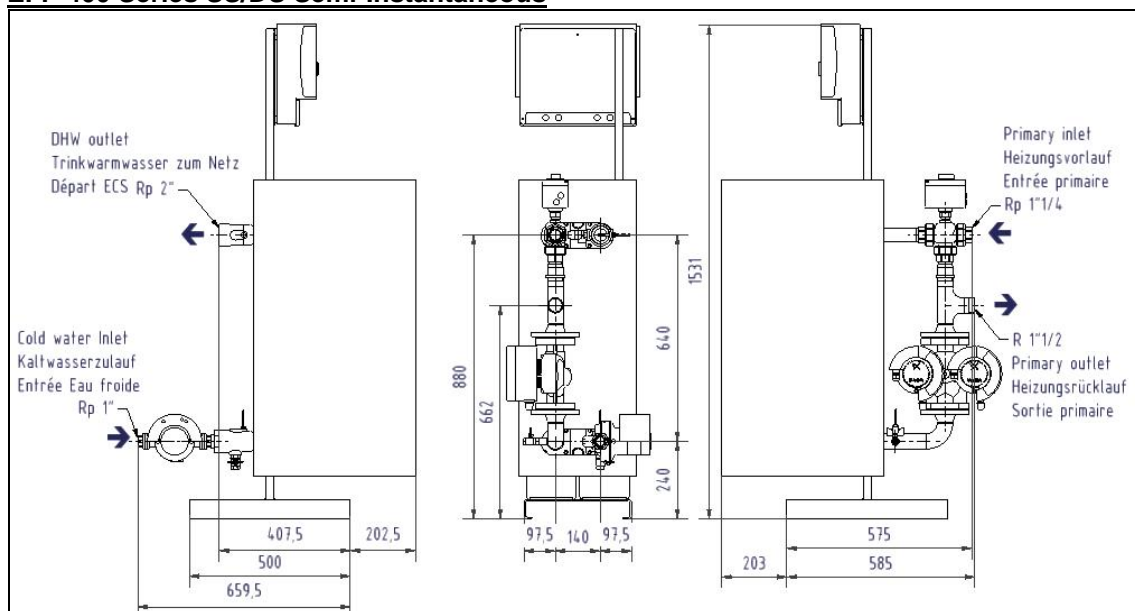
EFP 200 Series SS/DS Semi-Instantaneous



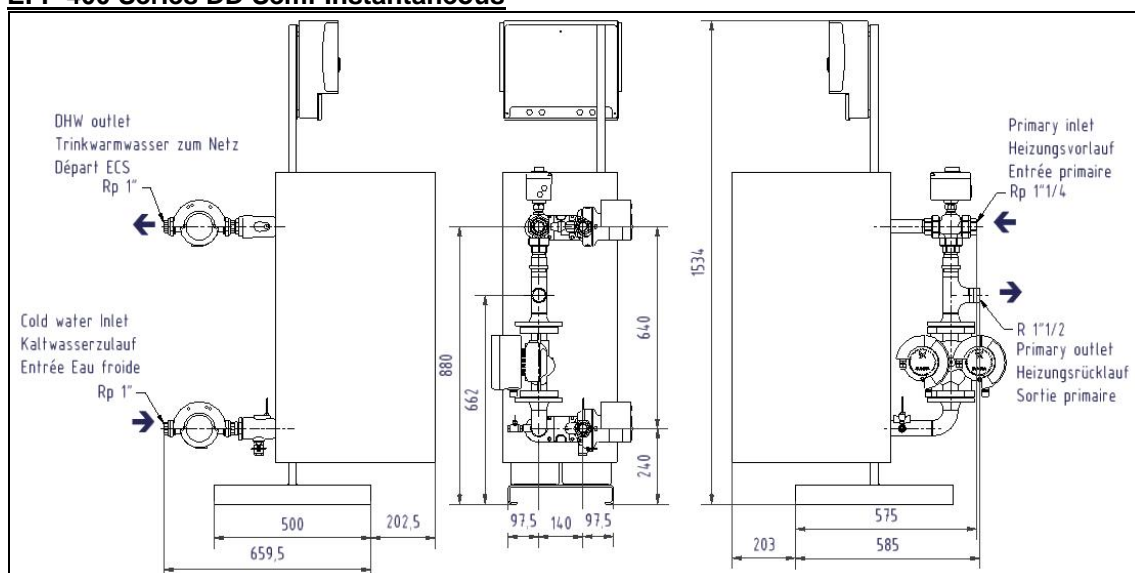
EFP 200 Series DD Semi-Instantaneous



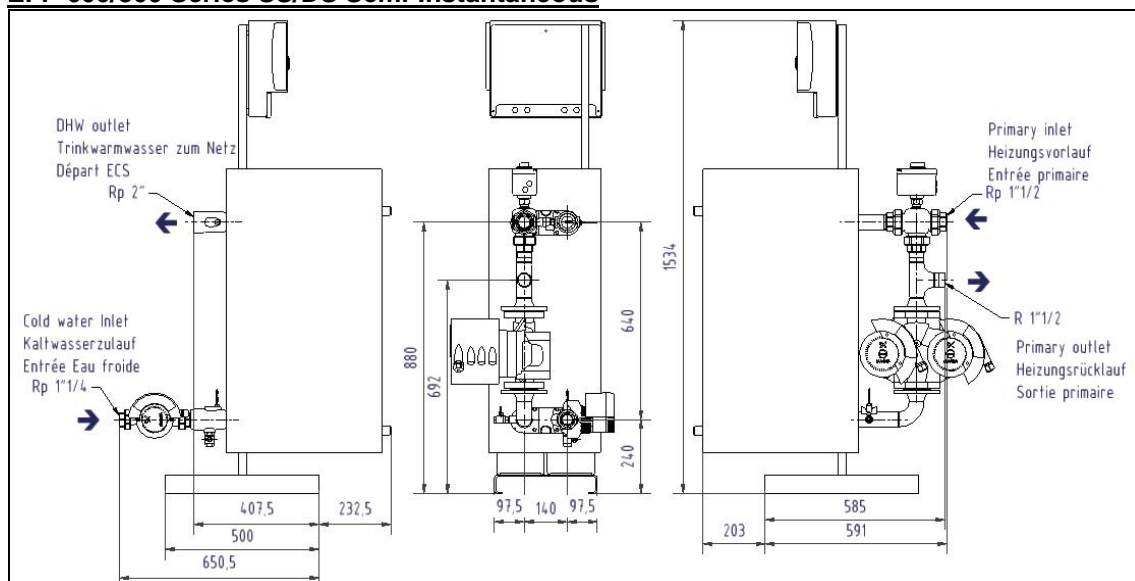
EFP 400 Series SS/DS Semi-Instantaneous



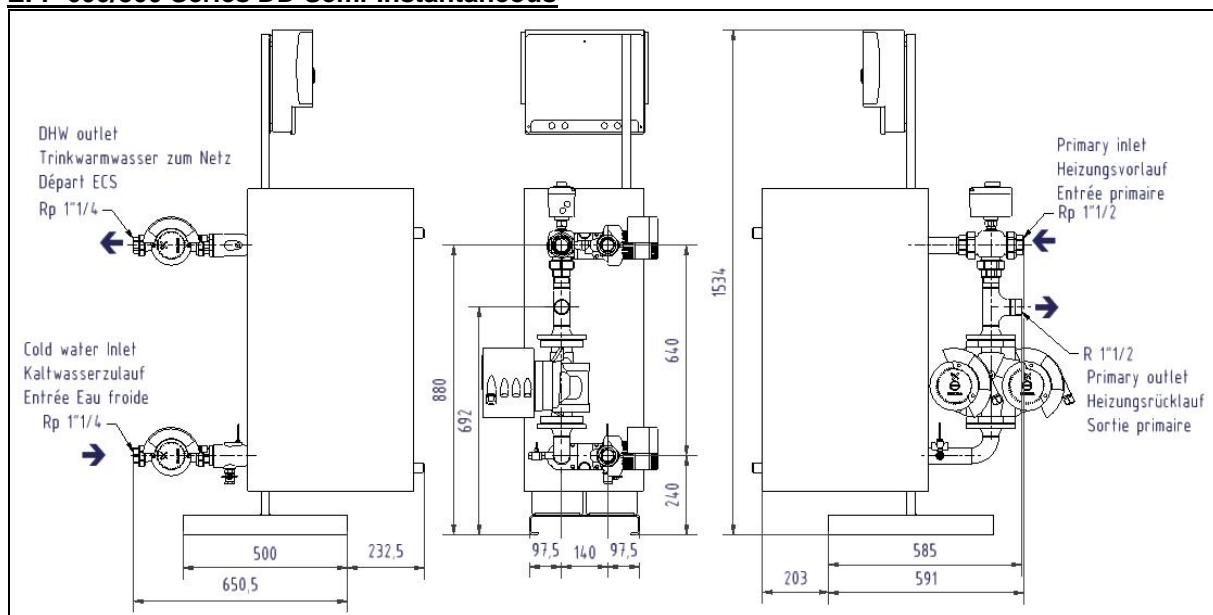
EFP 400 Series DD Semi-Instantaneous



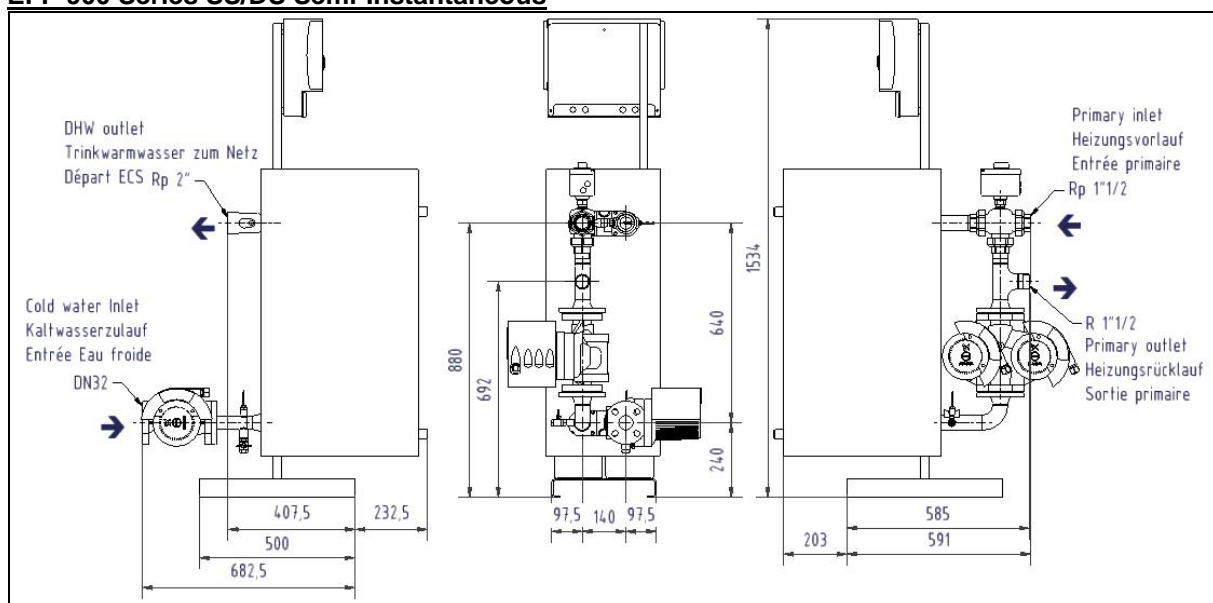
EFP 600/800 Series SS/DS Semi-Instantaneous



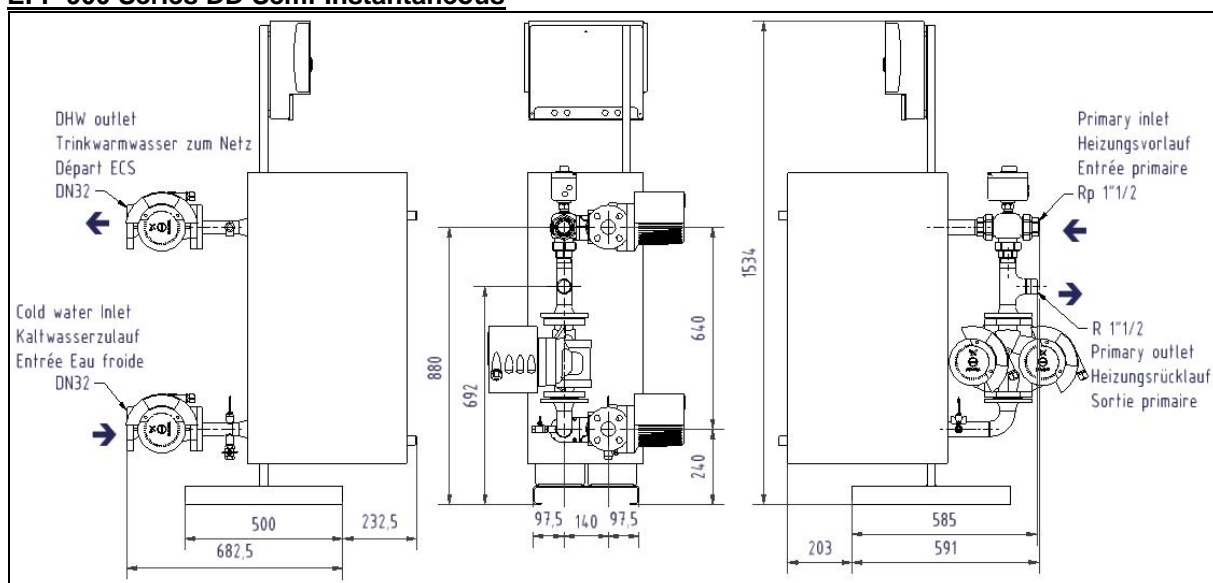
EFP 600/800 Series DD Semi-Instantaneous



EFP 900 Series SS/DS Semi-Instantaneous

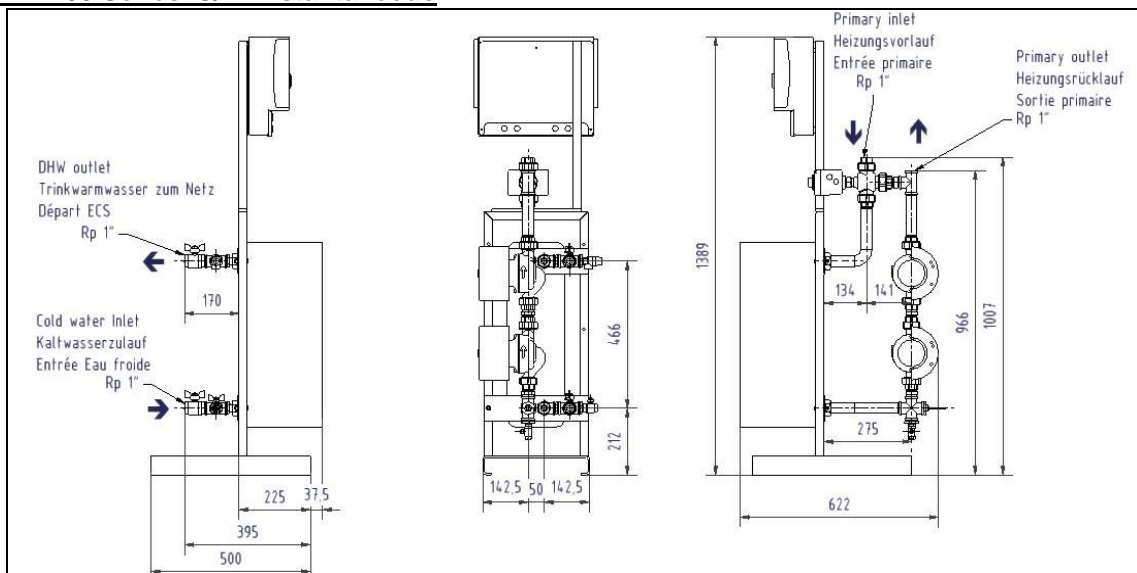


EFP 900 Series DD Semi-Instantaneous

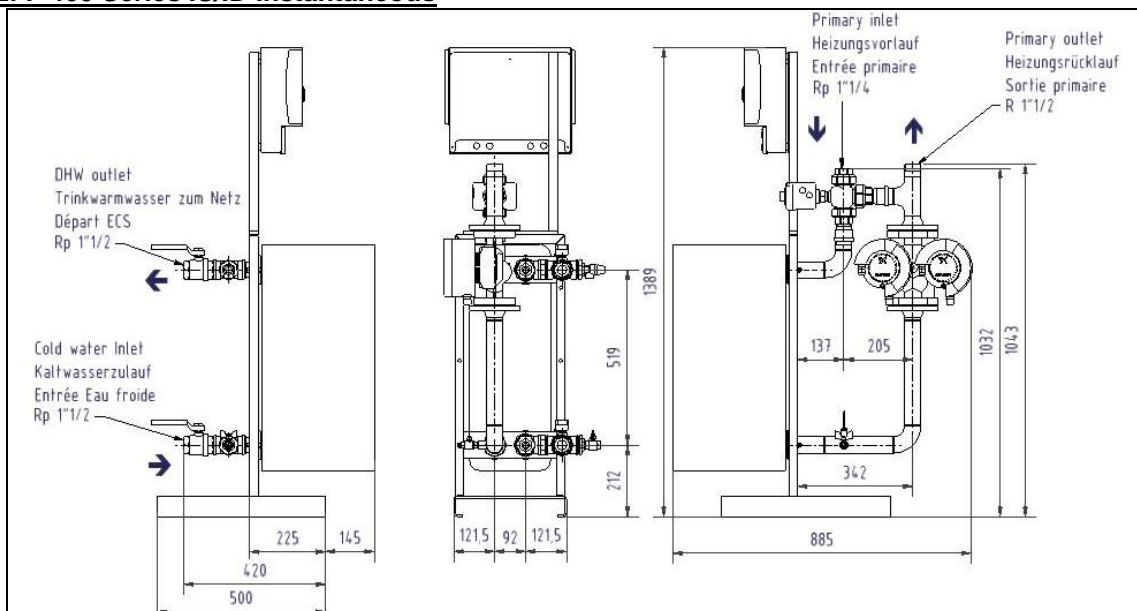


FUSION BONDED / COPPER BRAZED HEAT EXCHANGERS

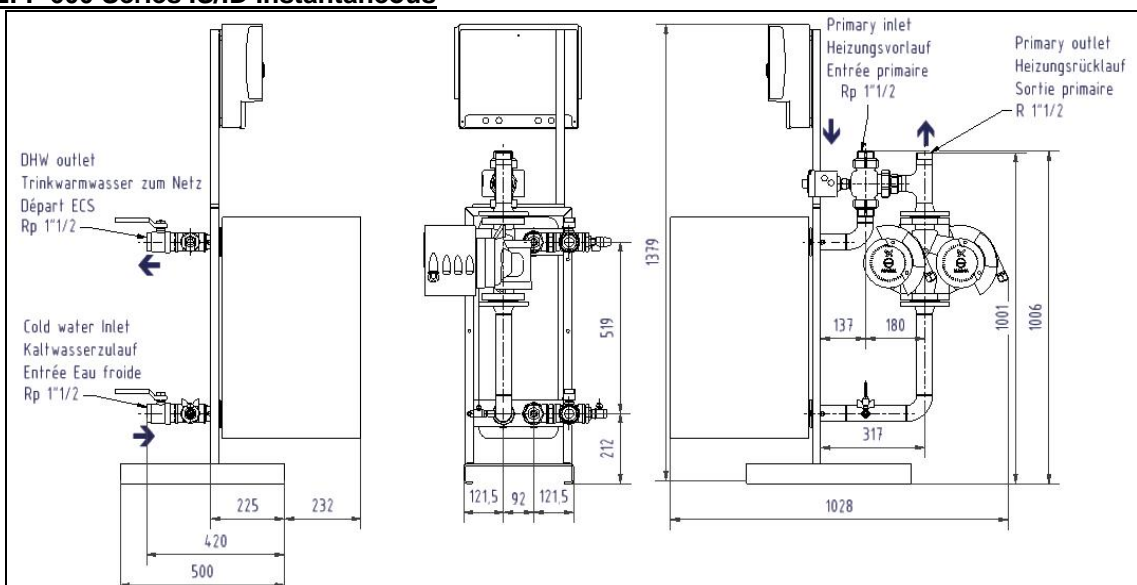
EFB/EFF 200 Series IS/ID Instantaneous



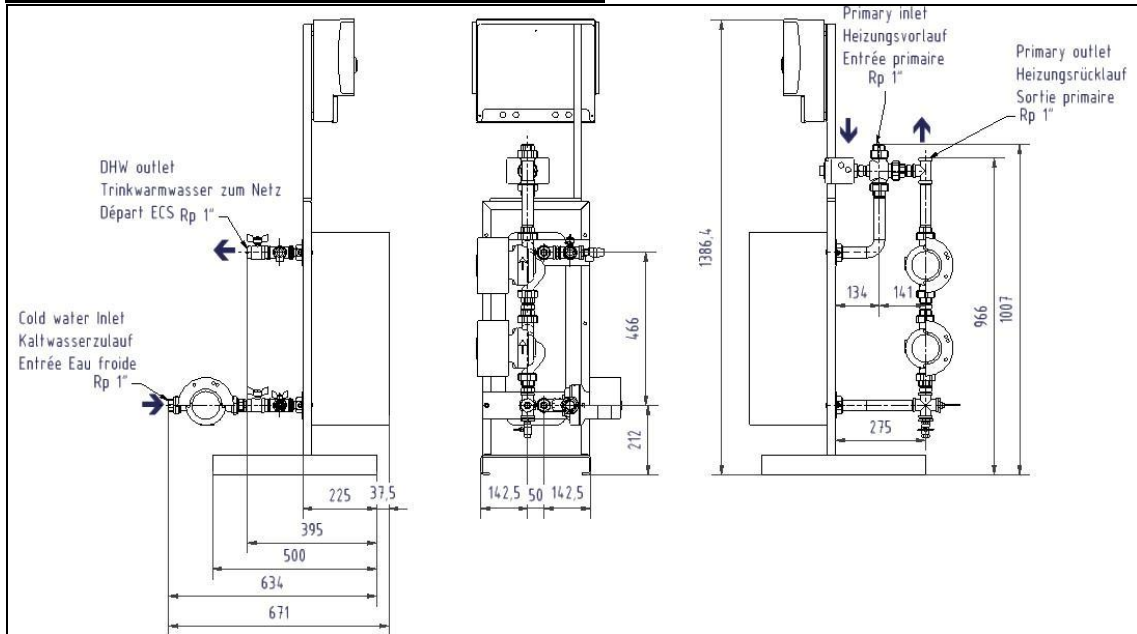
EFB/EFF 400 Series IS/ID Instantaneous



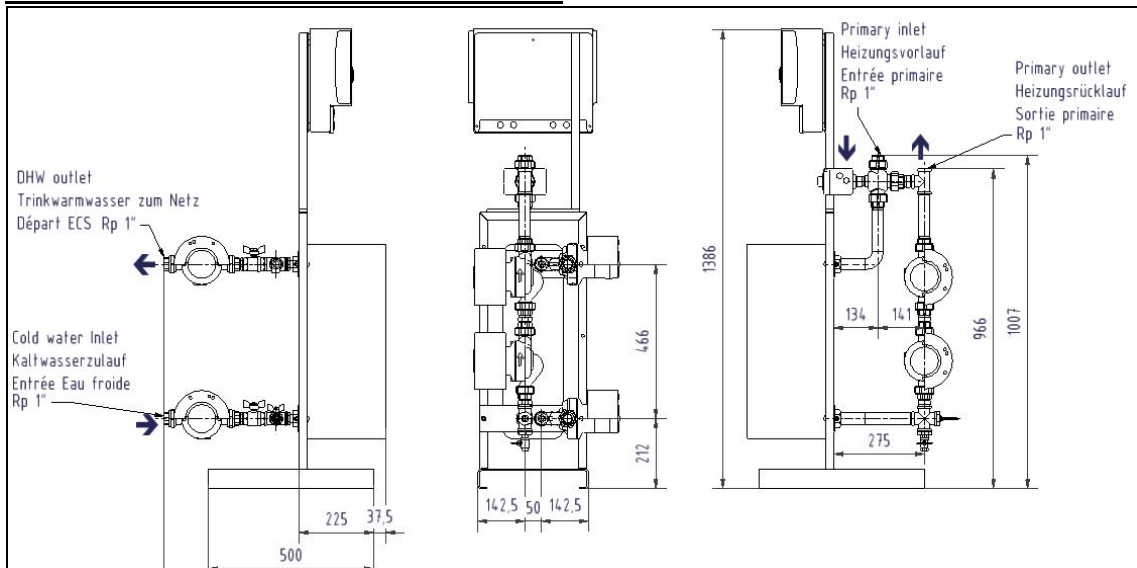
EFB/EFF 600 Series IS/ID Instantaneous



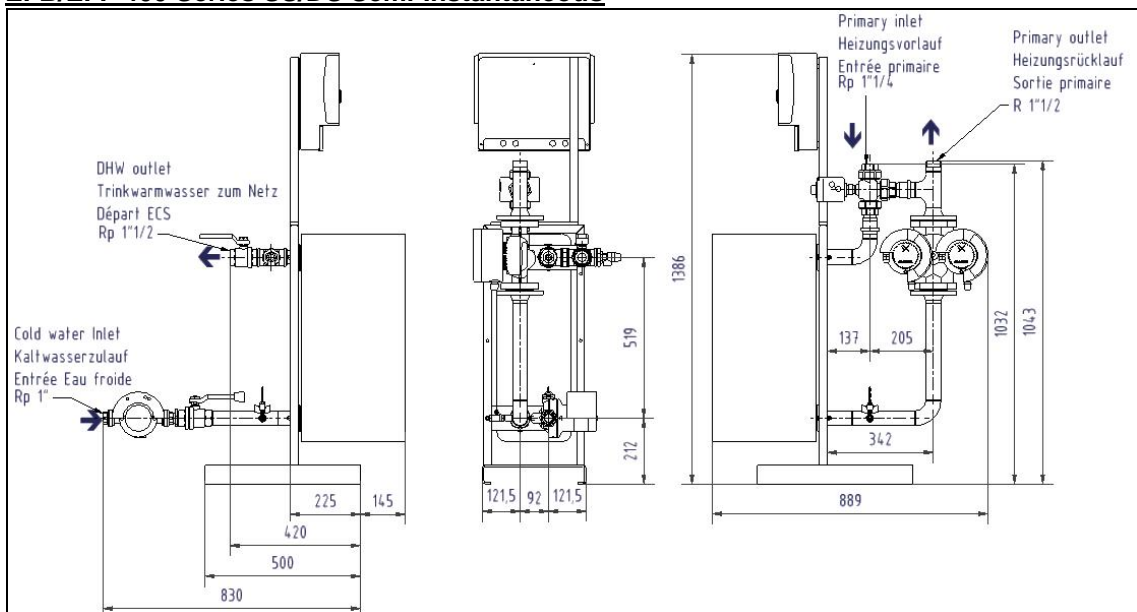
EFB/EFF 200 Series SS/DS Semi-Instantaneous



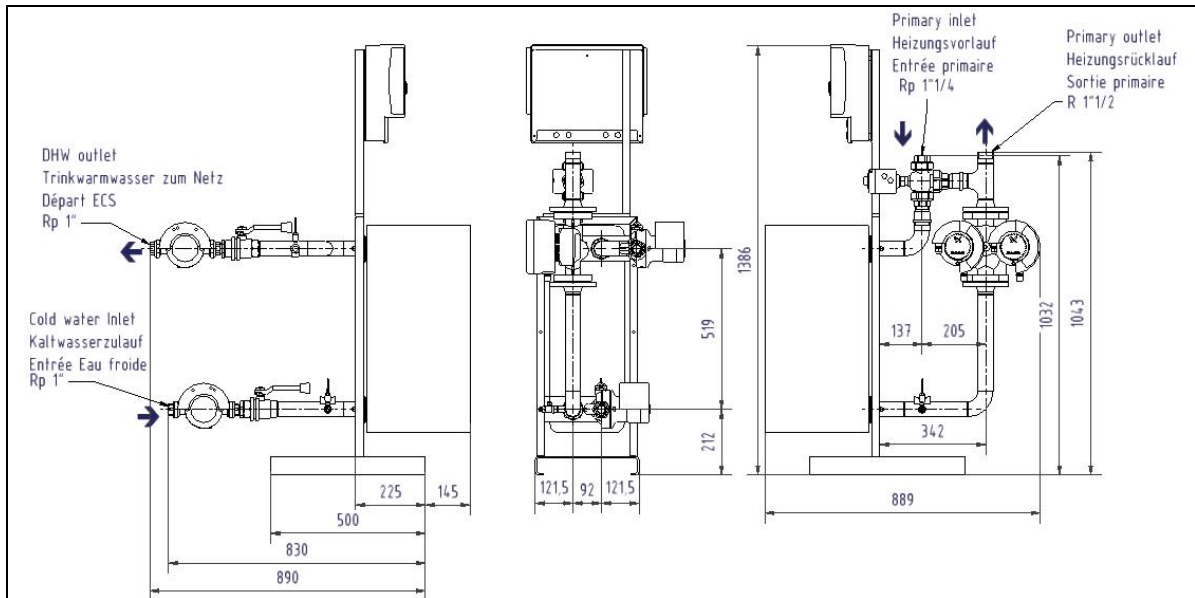
EFB/EFF 200 Series DD Semi-Instantaneous



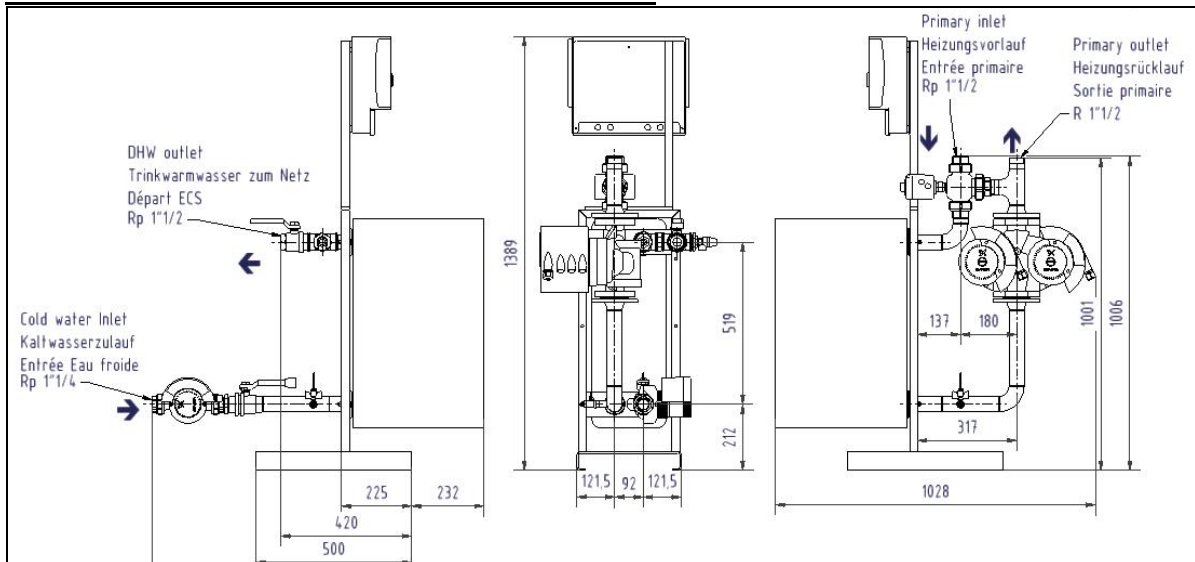
EFB/EFF 400 Series SS/DS Semi-Instantaneous



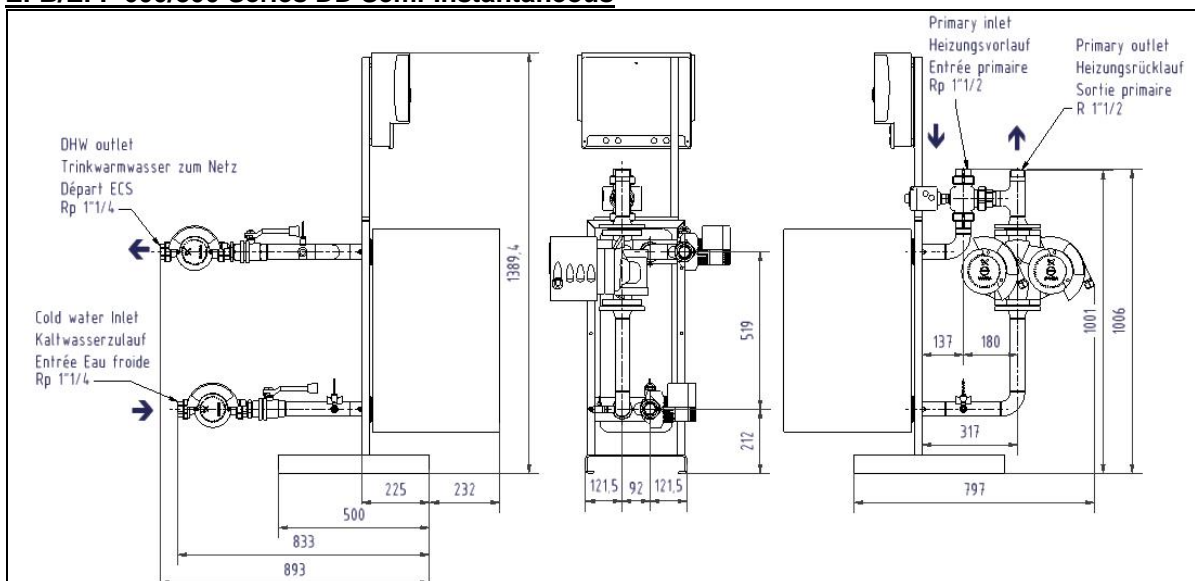
EFB/EFF 400 Series DD Semi-Instantaneous



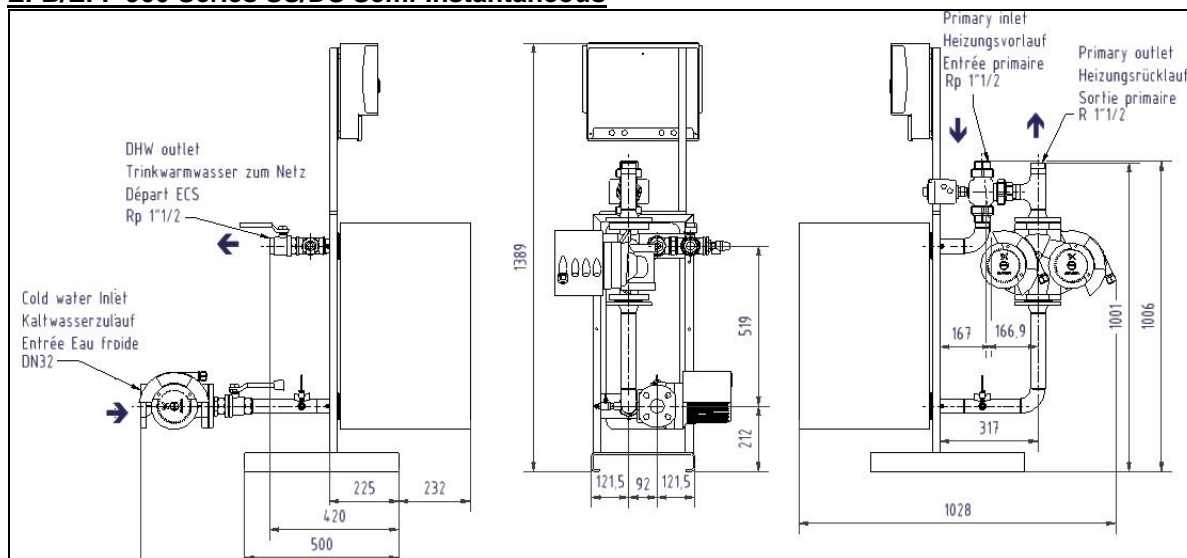
EFB/EFF 600/800 Series SS/DS Semi-Instantaneous



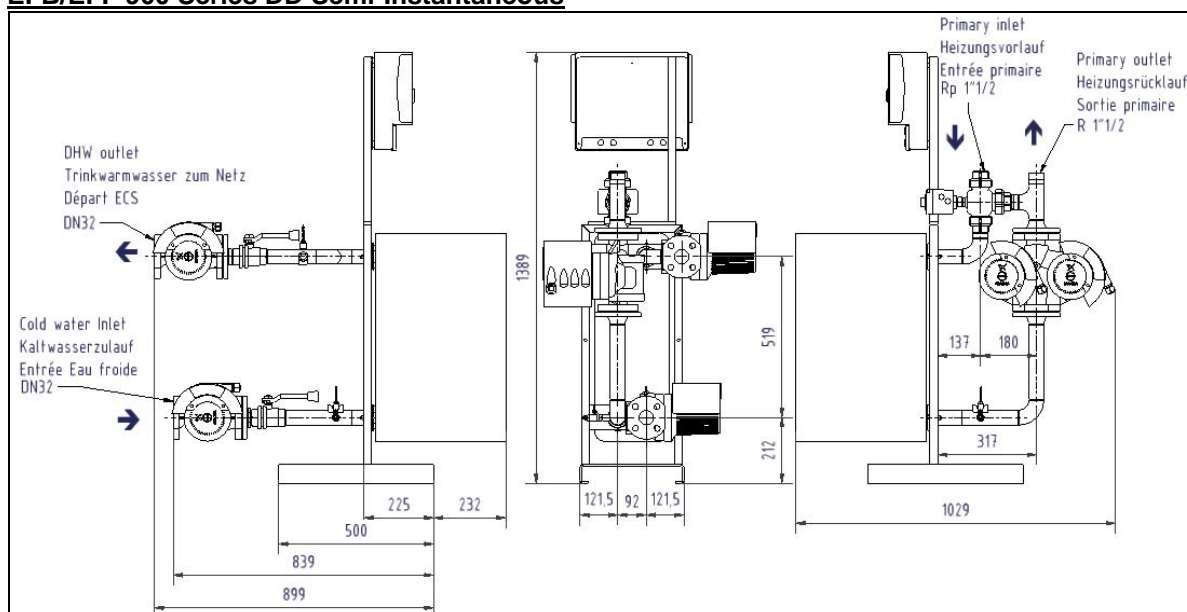
EFB/EFF 600/800 Series DD Semi-Instantaneous



EFB/EFF 900 Series SS/DS Semi-Instantaneous

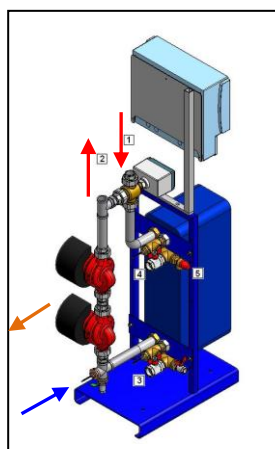


EFB/EFF 900 Series DD Semi-Instantaneous

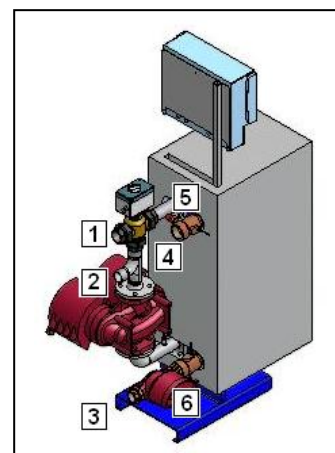


Factory fitting of a recirculation pump and a charging pump is not feasible..

INSTALLATION



- The primary water enters the modulating valve port ① and leaves through the fitting ②,
- Cold water enters at bottom part ③ and leaves at the required temperature at high part ④,
- Pipe-up the pressure relief valve ⑤. The secondary circuit should be equipped with a recirculation or a charging pump (6),
- Modules suitable for 230V 1 phase / 50 Hz + Earth,
- Make sure power supply in the field corresponds to the above voltage,
- A fuse protection should be provided on site.
- Alarm indication: Volt Free Contacts (VFCs), 3 Amps maxi, each under 230 V.

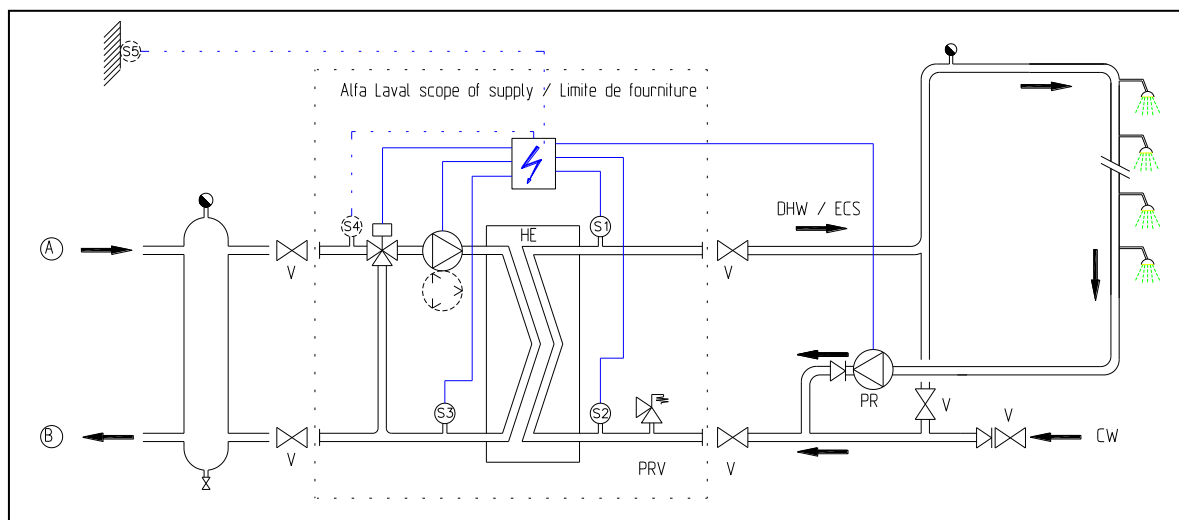


Minimum pressure/temperature on primary side : 1.0 barg/ 7°C, 1.5 barg / 100-110°C
Maximum pressure/temperature on primary side : 10 barg /110°C
Maximum pressure on secondary side : 10 barg / 110°C

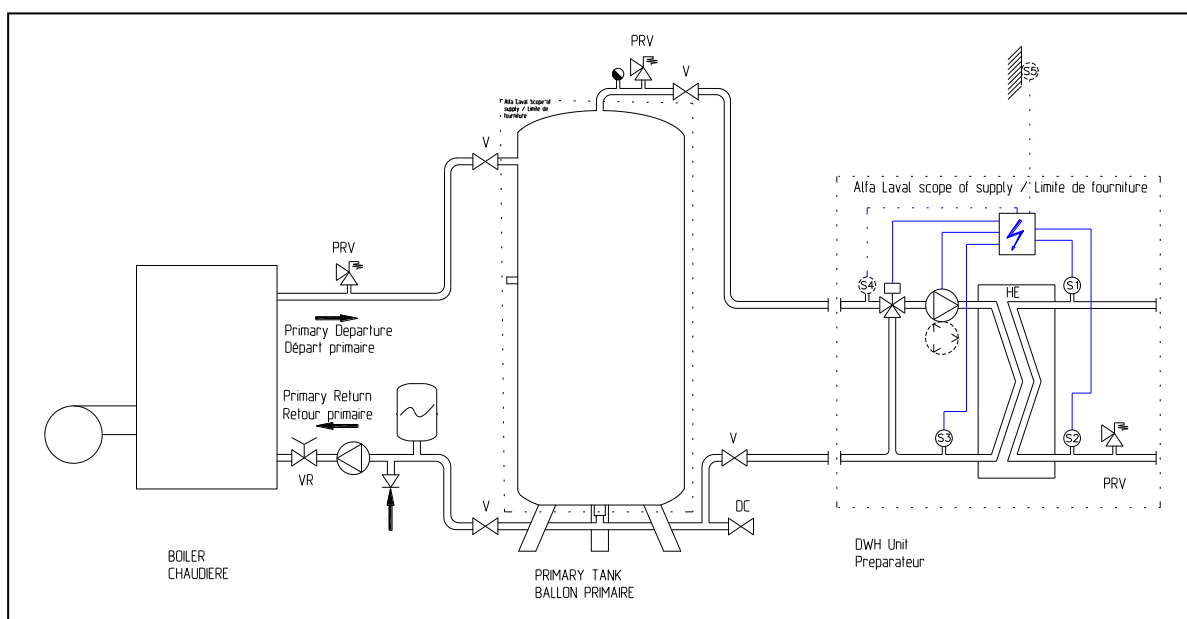
HYDRAULIC SCHEMATICS

The tap water modules should be installed according to the following schematics :

INSTANTANEOUS :



REP	DESIGNATION	REP	DESIGNATION
A	Primary inlet	PR	Recycling pump (option)
B	Primary outlet	V	Manual gate valve
CW	Cold water inlet	S1	DHW temperature sensor (master)
PRV	Pressure relief valve	S2	Secondary return temperature sensor
HE	Heat Exchanger (FB/CB/PHE)	S3	Primary return temperature sensor
S5	Outdoor temperature sensor (optional)	S4	Primary inlet temperature sensor (optional)

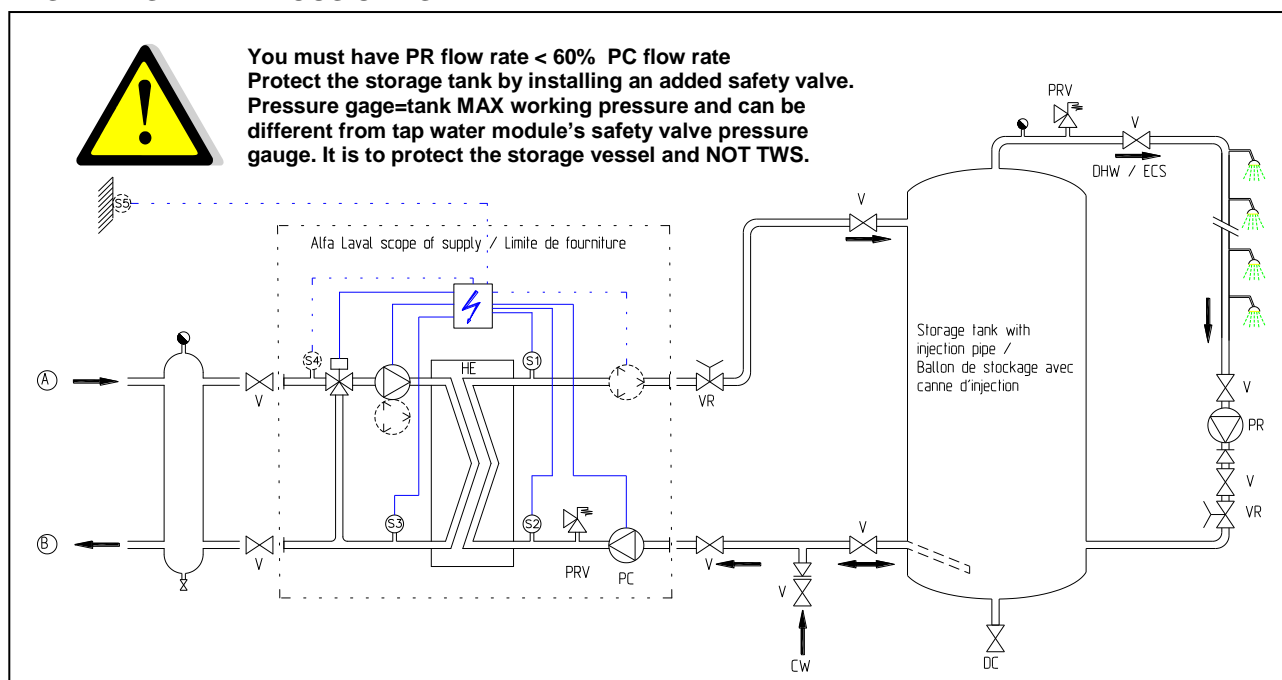


Primary water storage version, to limit available instantaneous heat power.

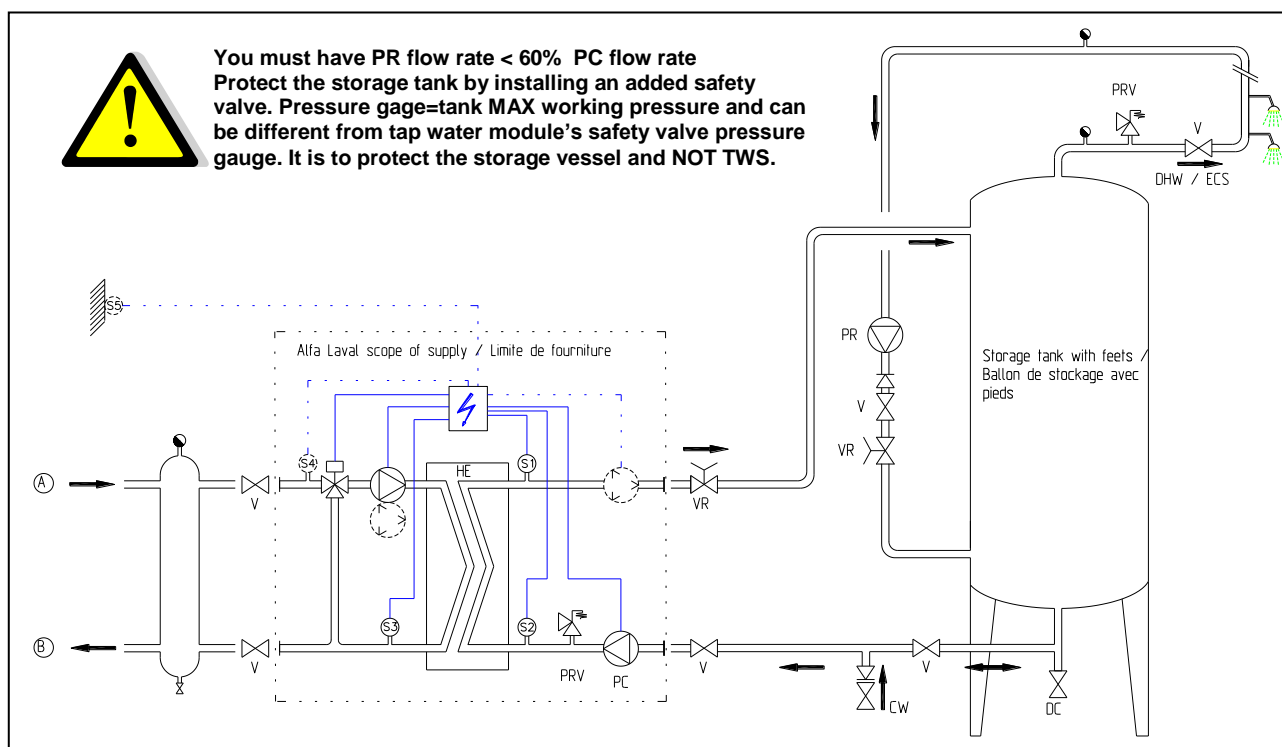


Whatever type, unit model and production type (Instantaneous or Semi Instantaneous), each pump (or pump motor when double ones) delivers 10% to 100% of the nominal primary pump signal and 25% to 100% of the nominal secondary pump signal, to stick to the actual demand.

SEMI INSTANTANEOUS UNITS :



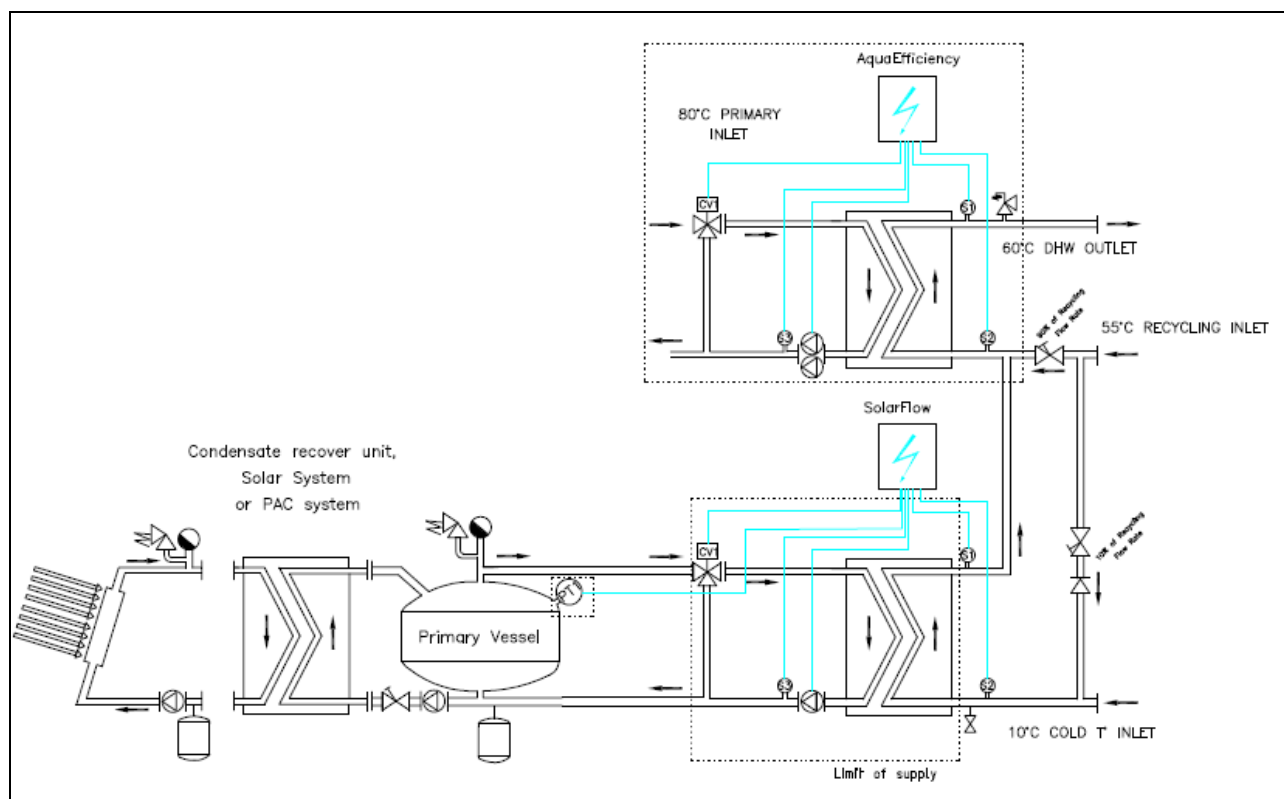
Type 1 Storage vessel connections (with inside injection pipe)



Type 2 storage vessel connections (with feet)

REP	DESIGNATION	REP	DESIGNATION
A	Primary Inlet	PR	Installation recycling pump
B	Primary Outlet	V	Manual gate valve
CW	Cold water inlet	VR	Flow setting valve
DC	Drain cock / flooding	S1	DHW temperature sensor (master)
PC	Charging pump	S2	Secondary inlet temperature sensor
PRV	Pressure relief valve	S3	Primary return temperature sensor
S5	Outdoor temperature sensor (optional)	S4	Primary inlet temperature sensor (optional)

SOLARFLOW SCHEMATIC DIAGRAM



REP	DESIGNATION	REP	DESIGNATION
S1	DHW temperature sensor (master)	S3	Primary return temperature sensor
S2	Secondary inlet temperature sensor	S4	Primary inlet temperature sensor (optional)
Pt1	Sonde de température extérieure (optionnelle, pour application chauffage)		

MAIN COMPONENTS* AND TECHNICAL DATA

AQUA EFFICIENCY M6H PRODUCT RANGE & COMPONENTS

70
↓
26-30
60
↑
10

3 Different primary sides
4 different secondary sides

AquaEfficiency M6H			Primary Side								Secondary Side				
	Series	P (Kw)	Flow Rate (m3/h)	Return T°	DN 3 port Valve	Pump type	Pmax (W)	Np	Free P (Kpa)		Flow Rate (m3/h)	HE ΔP (Kpa)	Pump type	Pmax (W)	Free P (kPa)
EFP 213	200	100	2.2	30	25	Magna 25-60	85	13	38		1.7	11	Magna(N) 25-60	85	52
EFP 217	200	150	3.3	30	25	Magna 25-60	85	17	19		2.6	9	Magna(N) 25-60	85	36
EFP 223	200	200	4.2	28	25	Magna 25-60	85	23	7		3.4	9	Magna(N) 25-60	85	36
EFP 425	400	250	5.5	27	32	Magna 40-100	180	25	32		4.3	9	Magna(N) 25-60	85	29
EFP 429	400	300	6.7	30	32	Magna 40-100	180	29	13		5.2	13	Magna(N) 25-60	85	17
EFP 435	400	350	7.5	29	32	Magna 40-100	180	35	6		6	12	Magna(N) 25-60	85	13
EFP 449	400	400	8	26	32	Magna 40-100	180	49	5		6.9	8	Magna(N) 25-60	85	10
EFP 637	600	450	10.2	31	40	Magna 40-120	450	37	40		7.7	15	Magna(N) 32-80	140	18
EFP 645	600	510	11	30	40	Magna 40-120	450	45	36		8.8	15	Magna(N) 32-80	140	10
EFP 849	800	550	12.1	30	40	Magna 40-120	450	49	29		9.5	15	Magna(N) 32-100	180	11
EFP 855	800	600	13.2	30	40	Magna 40-120	450	55	20		10.3	14	Magna(N) 32-100	180	6
EFP 961	900	640	14.1	30	40	Magna 40-120	450	61	10		11	14	Magna(N) 32-120	430	60
EFP 977	900	700	14.7	28	40	Magna 40-120	450	77	7		12	11	Magna(N) 32-120	430	58
EFP 997	900	750	15.1	26	40	Magna 40-120	450	97	7		12.9	11	Magna(N) 32-120	430	58

AquaEfficiency CB/FB 52/60/76 H			Primary Side							Secondary Side					
	Series	P (Kw)	Flow Rate (m3/h)	Return T° (°C)	DN 3 port Valve	Pump type	Pmax (W)	Np	Free P (Kpa)		Flow Rate (m3/h)	HE ΔP (Kpa)	Pump type	Pmax (W)	Free P (kPa)
EFB/EFF 2 6030/5230	200	100	2	25.7	25	Magna 25-60	85	30	37		1.7	13	Magna(N) 25-60	85	32
EFB/EFF 2 6040/5240	200	150	3	26	25	Magna 25-60	85	40	17		2.6	12	Magna(N) 25-60	85	30
EFB/EFF 2 6050/5250	200	190	3.8	26	25	Magna 25-60	85	50	5		3.3	16	Magna(N) 25-60	85	26
EFB/EFF 4 7640	400	240	5	28	32	Magna 40-100	180	40	51		4.1	6	Magna(N) 25-60	85	32
EFB/EFF 4 7650	400	340	7.1	28.5	32	Magna 40-100	180	50	17		5.8	8	Magna(N) 25-60	85	17
EFB/EFF 4 7660	400	390	8.1	28	32	Magna 40-100	180	60	5		6.7	8	Magna(N) 25-60	85	12
EFB/EFF 6 7670	600	500	11	29.5	40	Magna 40-120	450	70	48		8.6	9	Magna(N) 32-80	140	16
EFB/EFF 8 7680	800	600	13.2	30	40	Magna 40-120	450	80	27		10.3	10	Magna(N) 32-100	180	10
EFB/EFF 9 7690	900	650	14.3	29.5	40	Magna 40-120	450	90	15		11.2	10	Magna(N) 32-120	430	64
EFB/EFF 9 76100	900	690	14.8	29	40	Magna 40-120	450	100	10		11.9	9	Magna(N) 32-120	430	59

* As per version

Electrical consumptions are given at nominal capacities. This allowing to calibrate fuse protections in the main heating room control box. Effective consumptions will be much more less most of the time, as pump(s) operate at variable speed.



Please contact your Alfa Laval distributor for spare parts and note serial number and model designation: some components are specific to our tap water modules

DECLARATION OF CONFORMITY

This product is in compliance with following EEC norms:

- Pressure Equipment Directives (PED) 97/23/CE
- Low Voltage Directive (LVD) 73/23/EEC followed by 2006/95/EEC
- Following norms have been applied :
 - EN 60335-1 partly
 - EN 60204-1 partly

ELECTRICAL CONSUMPTIONS

MAX Electrical consumptions INSTANTANEOUS

230V 1 Phase + Earth

Common for PHE, FB and CB HE types

Series	Version	Pump type	P _{max} (W)*	I (A)*
200	IS	Magna 25-60	100	1.1
200	ID	2xMagna 25-60	185	1.7
400	IS	Magna 40-100	195	1.75
400	ID	2xMagna 40-100	375	3
600	IS	Magna 40-120	465	2.5
600	ID	2xMagna 40-120	915	4.5
800	IS	Magna 40-120	465	2.5
800	ID	2xMagna 40-120	915	4.5
900	IS	Magna 40-120	465	2.5
900	ID	2xMagna 40-120	915	4.5

MAX Electrical consumptions SEMI-INSTANTANEOUS

230V 1 Phase + Earth

Common for PHE, FB and CB HE types

Series	Version	Primary Pump type	Secondary Pump type	P _{max} (W)*	I (A)*
200	SS	Magna 25-60	Magna 25-60N	185	1.1
200	DS	2xMagna 25-60	Magna 25-60N	270	2.3
200	DD	2xMagna 25-60	2xMagna 25-60N	270	2.3
400	SS	Magna 40-100	Magna 25-60N	265	2.35
400	DS	2xMagna 40-100	Magna 25-60N	460	3.6
400	DD	2xMagna 40-100	2xMagna 25-60N	460	3.6
600	SS	Magna 40-120	Magna 32-80N	605	3.5
600	DS	2xMagna 40-120	2xMagna 32-80N	1055	5.5
600	DD	2xMagna 40-120	2xMagna 32-80N	1055	5.5
800	SS	Magna 40-120	Magna 32-100N	645	3.75
800	DS	2xMagna 40-120	Magna 32-100N	1095	5.75
800	DD	2xMagna 40-120	2xMagna 32-100N	1095	5.75
900	SS	Magna 40-120	Magna 32-120N	895	4.3
900	DS	2xMagna 40-120	Magna 32-120N	1345	6.3
900	DD	2xMagna 40-120	2xMagna 32-120N	1345	6.3

* Total max consumption including actuator + controller. 230V AC 50Hz+Earth power supply



Read carefully controller's instructions on next pages before servicing the unit.
Power supply the control box 230V 50 Hz + Earth, using electric protection in the main electric power box. Micro 3000 box is a secondary control box.
Human protections and protection against short circuits and over intensity must be installed in the main electric box.

FUSES



Only authorized people should operate on the unit. Cut off electrical supply of the unit before working on it.

The power boards are fitted with a set of fuses to protect the different components against overload. Please refer to the chart below :

Fuse	FU1	FU2	FU3	FU4	FU5
Protection	PUMP 1	PUMP 2	PUMP 3	PUMP 4	Power card
Size	6.3 x 32	6.3 x 32	6.3 x 32	6.3 x 32	6.3 x 32
Rating	2,5 A	2,5 A	2,5 A	2,5 A	250 mA
Voltage	250 V	250 V	250 V	250 V	250 V

Extra fuses are included in the control box for quick servicing.

WIRING ACTUATORS

Following actuator's brand and type, terminals labels are different and indicated here :

Wiring to actuator as per brandmark Raccordement au servomoteur selon marque			
	24V	0V	0-10V
Siemens	G	G0	Y
Samson 5824/5825	L	N/N+12	13
Sauter AVM125	01	MM	03
Sauter AVF125	01+06	MM	03
Sauter AR30W	2	1	3

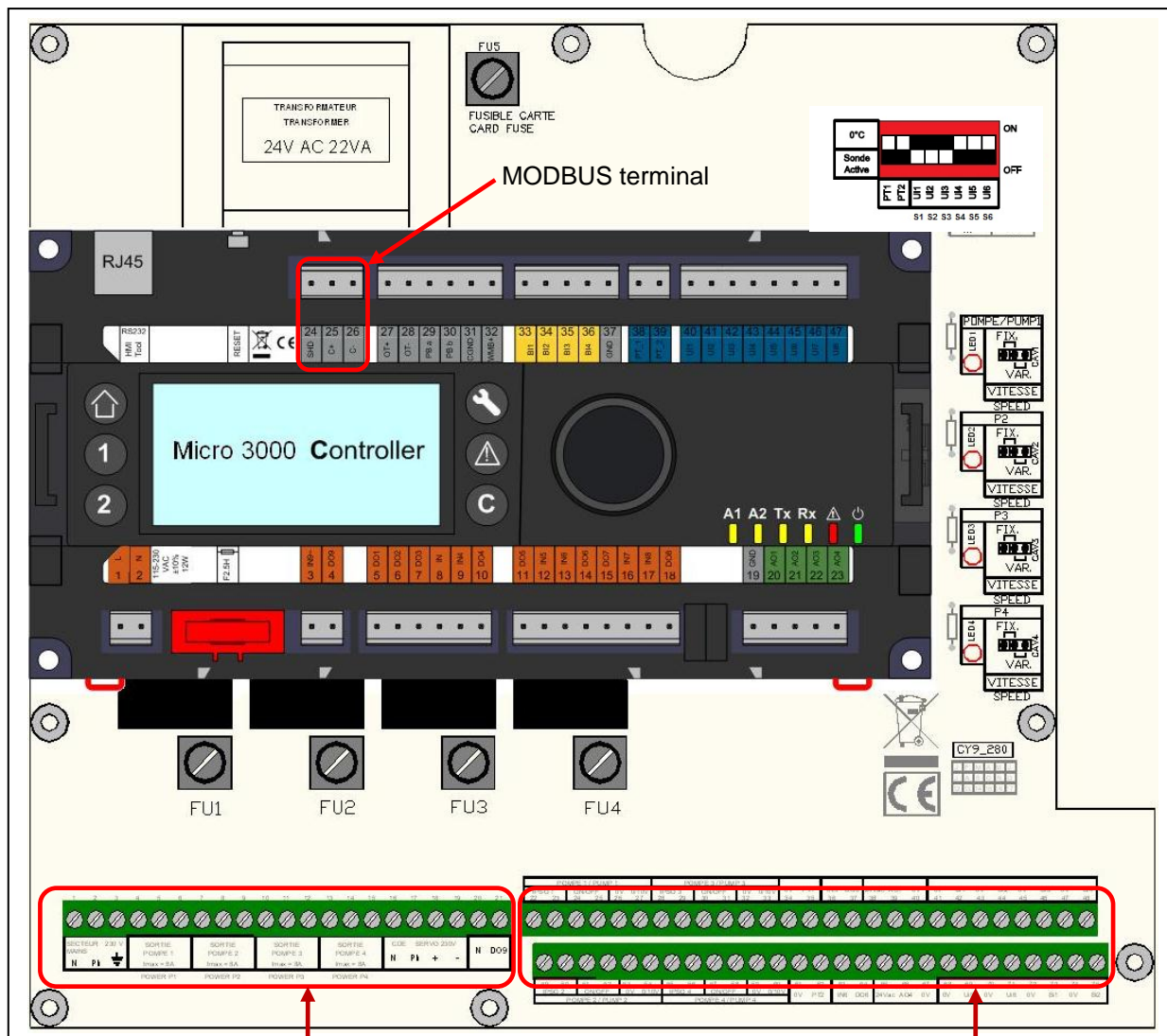
Samson 5824/5825 : shunt between N and 12 terminal.

CONTROL BOX

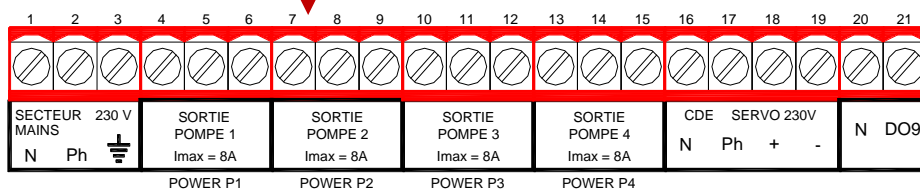
TERMINAL BLOCK LOCATION

The schematics below show the general components' implantation on the printed circuit board CY9_318.

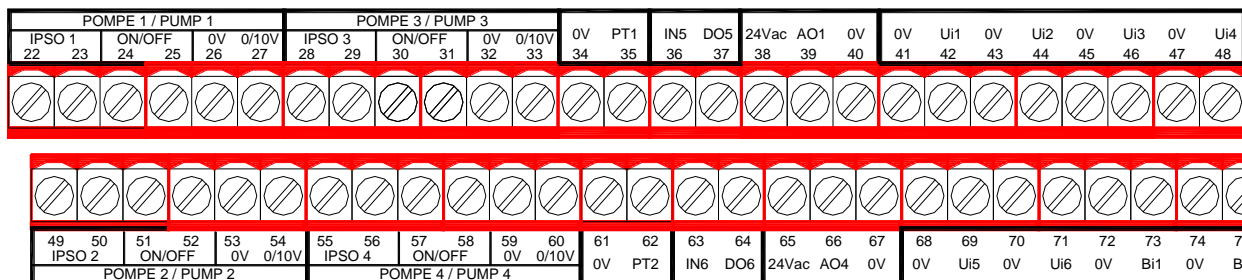
230 volts terminal is on the bottom left side and Inputs/Outputs terminal on the bottom right side.



230 VOLTS TERMINAL



I/O TERMINAL



PUMPS' NUMBER

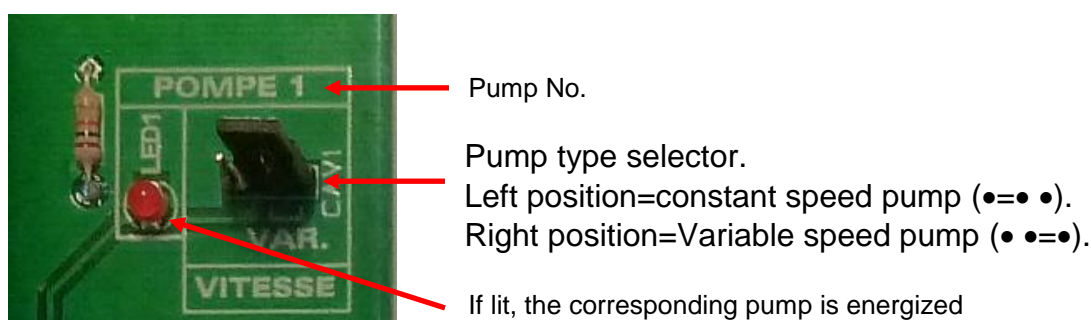
The pumps' configuration & connections are factory made, but in case of servicing, you have to identify pumps:

Codification	Meaning	Connected pump(s)
EFxxxxxIS	Instantaneous Single	P1
EFxxxxxID	Instantaneous Double	P1 + P2
EFxxxxxSS	Semi-instantaneous Single / Single	P1 + P3
EFxxxxxDS	Semi-instantaneous Double / Single	P1 + P2 + P3
EFxxxxxDD	Semi-instantaneous Double / Double	P1 + P2 + P3 + P4

If you want to add a recycling pump (Instantaneous ONLY), this one should be connected to P3.

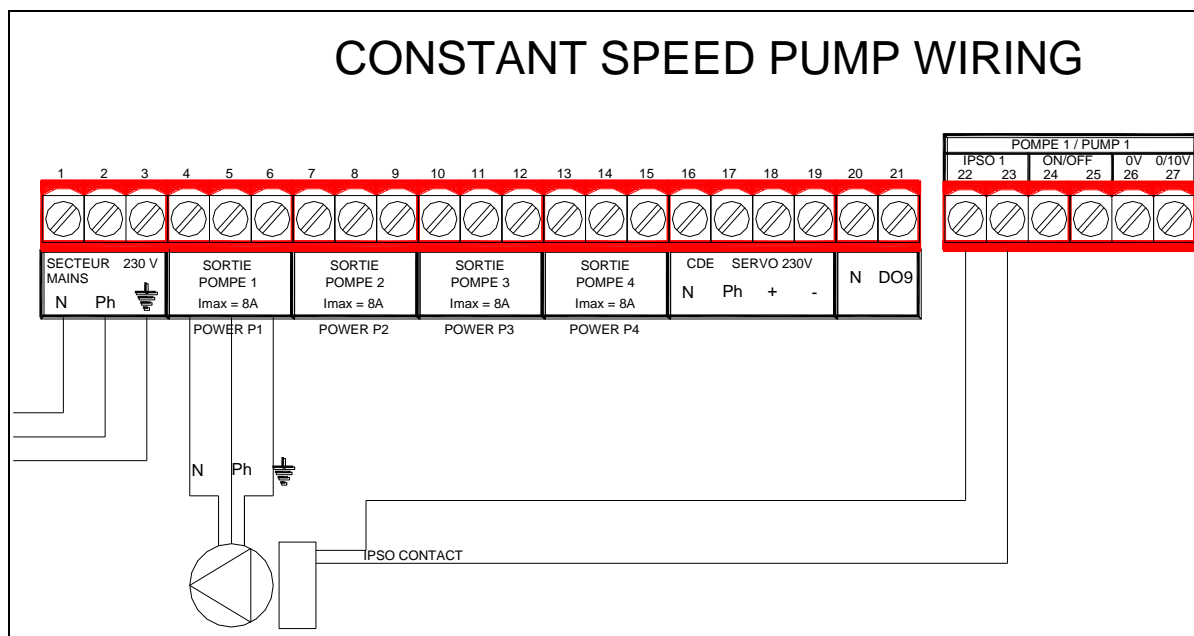
PUMP TYPE : FIXED OR VARIABLE SPEED

AquaEfficiency uses variable speed pumps. In the case you use or add a constant speed pump (Class A recycling pump for example), you have to configure the pump type on the power board by the mean of selector on the right side of the PCB as indicated on the picture:



PUMP WIRING

We show here how to connect the primary pump P1



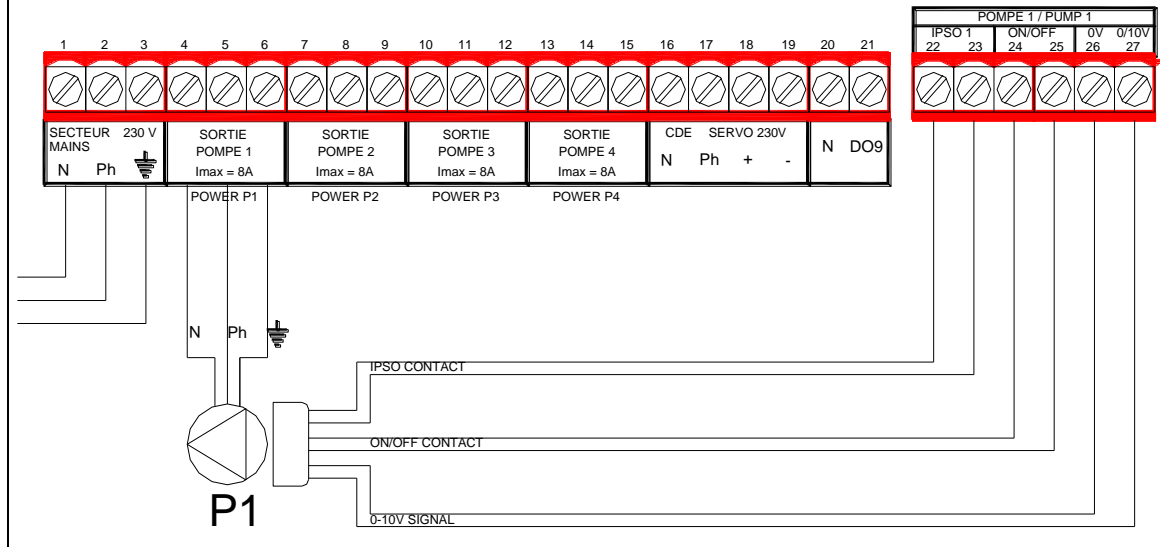
There is no polarity on ipsothermic contacts



Whatever the application, never exceed 8A continuous load pumps (AC3 class) under 230V AC.

If you use AC1 class load ($\text{Cos}\Phi \geq 0.95$), never exceed 20A under 230V AC

VARIABLE SPEED PUMP WIRING



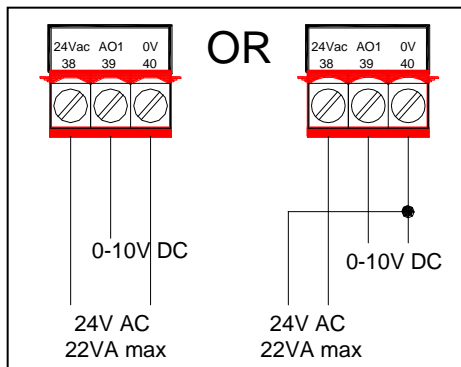
Whatever the application, never exceed 8A continuous load pumps (AC3 class) under 230V AC. If you use AC1 class load ($\cos\Phi \geq 0.95$), never exceed 20A under 230V AC

There is no polarity on isothermic contacts

0 volt (terminal 26) to be connected to 0 volt (or \perp) of pump's terminal

0-10 volts signal (terminal 27) to be connected to 0-10V signal input of pump's terminal

ACTUATOR WIRING



The 0V contact is common with 0-10V signal and 24V AC actuator power supply.

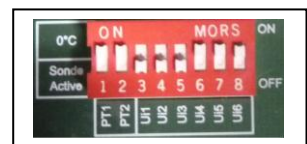
Some actuators have 4 terminals to wire :

- 0 Volt
- 0-10 volts (signal)
- "Neutral" of 24V AC power supply
- "Phase" of 24V AC power supply

In this case, just shunt the 0V and Neutral inside the actuator wiring box.

SENSORS' WIRING

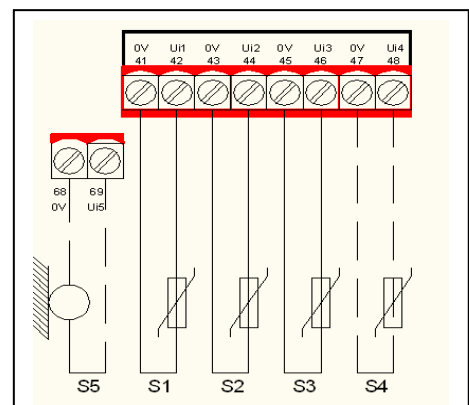
Temperature sensors are real or simulated thanks to micro switches. The affected sensors are S1...S6 and Pt1 & Pt2. If a sensor is not present, corresponding micro switch must be "ON". If the sensor is present and wired, put the micro switch on "OFF" position.



- S1 : Secondary outlet sensor (DHW)
- S2 : Secondary inlet sensor (CW/Recycling)
- S3 : Primary outlet sensor
- S4 : Primary inlet sensor (optional)
- S5 : Outdoor temp sensor (heating application only or AquaEfficiency combined with AlfaStore B unit)



S1...S5 are NTC20k temperature sensors.



SOLARFLOW ONLY

In the Solarflow application, an extra sensor Pt1 is needed. When $T_{pt1} \geq (T_{s2} + \Delta T_{recup \text{ min}})$, the unit is activated and regulates like standard AquaEfficiency.

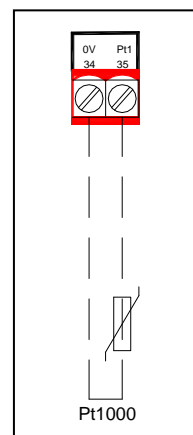
If not, the unit is placed in standby mode : Primary pumps only are stopped and valve is closed until T_{pt1} increases again. All other AquaEfficiency functions operational.

This mode is activated in the "Configuration Menu", where you can also define $+\Delta T_{recup \text{ min}}$ (5°C default value).

Please refer to the Solar menu on next pages.



Pt1 is a Pt1000 type temperature sensor.



ALFASTORE A (ALFAPILOT ON/OFF)

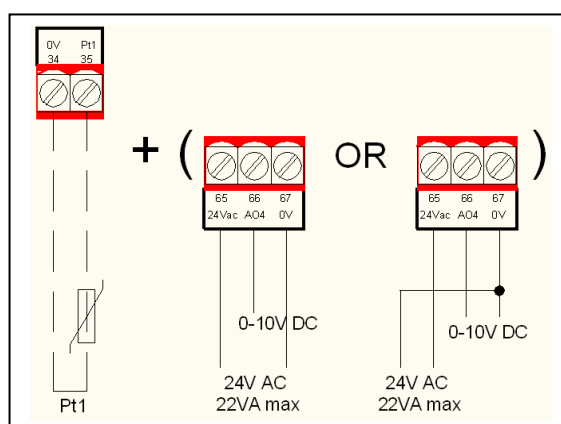
In this application, an extra sensor Pt1 is needed. When $T_{pt1} \geq (T_{s2} + \Delta T_{recup \text{ min}})$, the function is activated and opens wide a second control valve wired on AO4 output, extra actuator. All other AquaEfficiency functions operational.

This mode is activated in the "Configuration Menu", where you can also define $+\Delta T_{recup \text{ min}}$ (5°C default value).

Please refer to the Solar menu on next pages.



Pt1 is a Pt1000 type temperature sensor.



ALFAPILOT (ALFASTORE B)

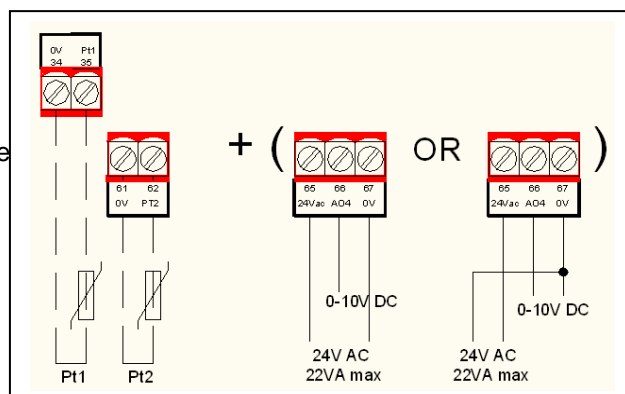
In this application, 2 extra sensors Pt1 and Pt2 are needed. When $T_{pt1} \geq (T_{s2} + \Delta T_{recup \text{ min}})$, the function is activated and opens a second control valve wired on AO4 output, extra actuator. The regulation is proportional at the opposite of AlfaStore A, and operates around a set point compared to the measured temperature on Pt2. All other AquaEfficiency functions are operational.

This mode is activated in the "Configuration Menu", where you can define many specific parameters.

Please refer to the Solar menu on next pages.



Pt1 and Pt2 are Pt1000 type temperature sensors.



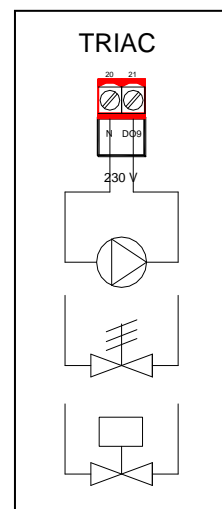
230V TRIAC OUTPUT

I BY-PASS function

Some condensing boilers do not accept too low temperature returns or too big primary temperature differentials. AquaEfficiency primary outlet can be around 25°C minimum (during peak taping period especially). If primary inlet temperature is 70°C, that makes a Delta T=45°C.

You have 2 solutions to heat up the primary return temperature if delta T is too high, considering the boiler :

- 1- Install a mixing bottle before the AquaEfficiency primary circuit. In this case use a transfer pump between the boiler and the bottle, considering that its flow rate must be higher than the AquaEfficiency nominal flow rate. This to mix some primary inlet with the primary returns and then to increase the temperature. Such a solution is indicated in our flow charts.
- 2- Install a by-pass before the unit with an electrical 230 Volts normally closed shutting component : electro valve 230V NC, small pump 230V 1A max, or 2 port valve 230V 3 steps signal with return to zero position in case of no power supply.
AquaEfficiency is able to pilot this extra component help with an added primary inlet sensor, S4 and the wiring terminal as shown. The “230V Triac Menu” will then have to be configured (see later on). In operating mode, if delta T (S4-S3) is higher than a preset value (that you can change), the triac output is energized to give 230V between N and DO9 terminal, to pilot the by-pass component.



Neutral to be connected on N (terminal 20) and phase on DO9 (terminal 21)

II- 230V CLOCK PULSE FUNCTION

To make another use of the 230V electrical output, you can configure it as a pulse function to activate shortly an electrical drain valve for example. In this configuration, you can program day, week or special days you want this to happen and the pulse duration (can be each Sunday at 10h00 for example and for 5 seconds). Please refer to the “230V Triac Menu” later on.

RELAY 1 CONTACT WIRING (Affectation in Configuration sub menu)

To be connected between IN5 and DO5 (36 & 37 terminals). This contact is **normally open (NO)**.



If a default occurs, it closes.



If you use 230V phase through this contact, do not exceed 2A load.

RELAY 2 CONTACT WIRING (Affectation in Configuration sub menu)

To be connected between IN6 and DO6 (63 & 64 terminals). This contact is **normally open (NO)**



If a default occurs, it closes.



If you use 230V phase through this contact, do not exceed 2A load.

REMOTE CONTROL

The whole unit can be started or stopped remotely help with a volt free contact connected between BI1 and 0V (72 & 73 terminals).



**DO NOT power supply this contact!
Volt free contact only**

When contact is open, the unit operates normally. If it is closed, primary and secondary pump(s) is(are) stopped and valve(s) get a 0% (0 volt) signal. Controller display remains activated

COMMISSIONING

The installation and use instructions should be respected, and the factory settings be unchanged.

- Rinse the pipe works before piping the tap water module up.
Pipe works may contain solid particles that could block or prevent the 3 or 4 port modulating valve from operating normally,
- Pipe the primary and the secondary of the module,
- Fill-up both sides progressively with water,
- Purge air at high parts,
- Purge all the pump bodies,
- Switch the power on,
- Check controller setting and enable the required functions,

MAINTENANCE

Our tap water modules do not require frequent inspections or dismantling.

The frequency of the inspections depends on the water hardness, temperature and consumption (Flow rate).

Scaling of the secondary side will be evidenced by :

- A high pressure drop on the secondary side of the exchanger,
- Improper temperature range on the secondary side of the exchanger,
- Low temperature difference between inlet and outlet on the primary side of the exchanger when the control valve is fully open,
- A warning from the controller if the unit is equipped with the scaling control or CIP option (F/B series only).

Disassembling of the exchanger can be done very quickly according to the following procedure:



Maintenance should be operated by qualified and authorized person only

Risk of electric shocks: Cut off electrical supply of the unit

Burning risk: let the exchanger cool down until a temperature of 40°C approximately is reached on both sides

- Then, isolate primary and secondary hydraulic circuits,
- Open the purge cocks to drop the internal pressure of each sides,

PLATE HEAT EXCHANGERS (P Series)

- Measure the distance between the two frames of the exchanger (Plate pack thickness) and note it down,
- Open the exchanger by unscrewing and removing the frame compression bolts,



To avoid injuries owing to sharp edges, protective gloves should always be worn when handling plates and protective sheets (like the ones for insulation).

- Remove the plates without damaging the gaskets and note their orientation and position,
- Clean the plates using a soft plastic brush and water or a solution of diluted acid in accordance with PHE plate general cleaning instructions.



DO NOT USE hydrochloric acid or any acid that could corrode stainless steel plates

DO NOT USE water with more than 330 ppm Cl when making a cleaning solution.

Nitric (for calcium carbonate), sulfamic (for calcium sulphate) or citric (for silt) acids can be used. Concentration should not exceed 4% at 60°C. Protective gloves and glasses should always be worn while these operations.

Carefully rinse the plates with clean water after cleaning.

- Re mount the plates in the same order and at the same position they were before,
- Screw the frames to the same distance they were before (Plate pack thickness dimension),
- It is also important to clean the control sensor pocket.

For further informations please refer to Alfa Laval Instruction Manual Ref. 1644725-01

CÔTES DE SERRAGE PHE INTER BATI/ PLATES' PACKAGE THICKNESS PHE IN BETWEEN FRAMES



N Type thickness	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45
T2 0.5mm	8.7	14.5	20.3	26.1	31.9	37.7	43.5	49.3	55.1	60.9	66.7	72.5	78.3	84.1	89.9	95.7	101.5	107.3	113.1	118.9	124.7	130.5
M3H Ti 0.4mm	8.4	14	19.6	25.2	30.8	36.4	42	47.6	53.2	58.8	64.4	70	75.6	81.2	86.8	92.4	98	103.6	109.2	114.8	120.4	126
M3H 0.5mm	8.7	14.5	20.3	26.1	31.9	37.7	43.5	49.3	55.1	60.9	66.7	72.5	78.3	84.1	89.9	95.7	101.5	107.3	113.1	118.9	124.7	130.5
M3D 0.8mm	9.6	16	22.4	28.8	35.2	41.6	48	54.4	60.8	67.2	73.6	80	86.4	92.8	99.2	105.6	112	118.4	124.8	131.2	137.6	144
T5M 0.5mm	8.7	14.5	20.3	26.1	31.9	37.7	43.5	49.3	55.1	60.9	66.7	72.5	78.3	84.1	89.9	95.7	101.5	107.3	113.1	118.9	124.7	130.5
M6H 0.5mm	7.5	12.5	17.5	22.5	27.5	32.5	37.5	42.5	47.5	52.5	57.5	62.5	67.5	72.5	77.5	82.5	87.5	92.5	97.5	102.5	107.5	112.5
M6M 0.5mm	10.5	17.5	24.5	31.5	38.5	45.5	52.5	59.5	66.5	73.5	80.5	87.5	94.5	101.5	108.5	115.5	122.5	129.5	136.5	143.5	150.5	157.5
M6MD 0.75mm	11.25	18.75	26.25	33.75	41.25	48.75	56.25	63.75	71.25	78.75	86.25	93.75	101.25	108.75	116.25	123.75	131.25	138.75	146.25	153.75	161.25	168.75

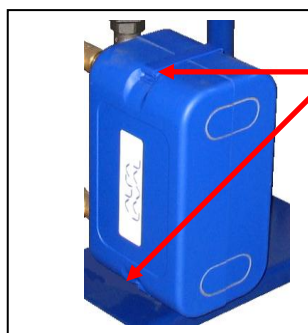
N Type thickness	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	97
T2 0.5mm	107.3	113.1	118.9	124.7	130.5																	
M3H Ti 0.4mm	103.6	109.2	114.8	120.4	126	131.6	137.2	142.8	148.4	154												
M3H 0.5mm	107.3	113.1	118.9	124.7	130.5	136.3	142.1	147.9	153.7	159.5												
M3D 0.8mm	118.4	124.8	131.2	137.6	144	150.4	156.8	163.2	169.6	176												
T5M 0.5mm	107.3	113.1	118.9	124.7	130.5	136.3	142.1	147.9	153.7	159.5	165.3	171.1	176.9	182.7	188.5	194.3	200.1	205.9	211.7	217.5	223.3	281.3
M6H 0.5mm	92.5	97.5	102.5	107.5	112.5	117.5	122.5	127.5	132.5	137.5	142.5	147.5	152.5	157.5	162.5	167.5	172.5	177.5	182.5	187.5	192.5	242.5
M6M 0.5mm	129.5	136.5	143.5	150.5	157.5	164.5	171.5	178.5	185.5	192.5	199.5	206.5	213.5	220.5	227.5	234.5	241.5	248.5	255.5	262.5	269.5	339.5
M6MD 0.75mm	138.75	146.25	153.75	161.25	168.75	176.25	183.75	191.25	198.75	206.25	213.75	221.25	228.75	236.25	243.75	251.25	258.75	266.25	273.75	281.25	288.75	363.75

FUSIONNED BONDED OR BRASED (F/B Series)



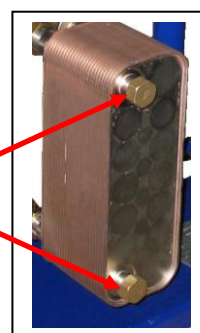
For these heat exchangers, use the Alfa Laval CIP kit, with compatible cleaning products. Be sure the heat exchanger has been insulated, using primary and secondary gate valves

Unscrew the specific caps located at the opposite of primary and secondary ports.



Retrieve top and bottom clips to remove insulation

To process cleaning, use CIP connections 3/4" (CB60/FB52) or 1 1/2" (CB/FB76). Remove connection caps and plug cleaning system



We recommend you the use of Alfa Laval CIP 20 type with specific cleaning liquid. Different types are available, especially for foaming or lime scaling : AlfaPhos for example. Use a neutralization solution before cleaning with clear water (AlfaNeutra for example).



- Circulators and pumps do not require any specific maintenance. Check annually that no leaks are detected level with the rotative seal when external motor pumps are used. Measure electric motor current drawn.
- The control valves do not require any specific maintenance. Annually check that no leaks are detected level with the sliding rod seal package.
- The electrical panel does not require any specific maintenance. Annually check electrical connection tightenings.

TROUBLE SHOOTING

FINDINGS	PROBABLE CAUSES	REMEDIES
Pump not operating	<p>Locked rotor or damaged</p> <p>Corresponding led is not lit</p> <p>Pump relay damaged</p> <p>Pump protection fuse blown</p> <p>High Alarm condition detected</p> <p>No voltage to control board terminals</p> <p>No voltage to pump motor terminals</p> <p>Controller improperly set</p>	<p>Force to rotate. Replace if required</p> <p>Replace Power Board</p> <p>Replace Power Board</p> <p>Check then replace if necessary</p> <p>Clear alarm then reset system</p> <p>Check power supply cable and fuses,</p> <p>Check protection fuse on main board, cable condition and connections</p> <p>Contact After Sales Service</p>
Low temp alarm condition	<p>Primary pump stopped</p> <p>Too low primary temperature</p> <p>Too high tap water flow rate (SI)</p> <p>Set point too high</p> <p>3 way valve remains closed</p>	<p>See above</p> <p>Check for a closed valve in the primary</p> <p>Reduce buffer vessel charging flow rate</p> <p>Refer to next box below</p>
Modulating valve does not operate	<p>Damaged or broken actuator</p> <p>Broken or improperly tightened coupling</p> <p>Valve blocked</p> <p>No signal from the controller</p> <p>Supply wires improperly tightened</p> <p>Actuator stroke restricted</p>	<p>Test then replace if necessary</p> <p>Check then replace if necessary</p> <p>Replace</p> <p>Check then replace if necessary</p> <p>Check wires, re-tighten connections</p> <p>Dismount then clean the valve</p>
High alarm condition detected	<p>Charging pump stopped (SI versions)</p> <p>Low recirculation flow rate (I versions)</p> <p>Alarm differential too low</p> <p>Modulating valve not closing</p> <p>Too much differential of pressure across the modulating valve</p>	<p>Refer to "Pump not operating" above</p> <p>Check and fix problem</p> <p>Check and set the controller</p> <p>Refer to previous box above</p> <p>Check the way the TWM is piped-up. Mixing arrangement should be used</p>
<p>Correct temperatures across the exchanger not obtained.</p> <p>Valve and pumps operating satisfactorily</p>	<p>Excessive exchanger scaling at the primary or secondary side</p> <p>Primary pipe work obstructed or strainer upstream clogged</p> <p>Isolation valve closed</p> <p>Air presence in the primary</p> <p>Excessive pressure drops</p>	<p>Open and clean the exchanger according to cleaning instructions</p> <p>Inspect primary pipe work.</p> <p>Clean strainer on the primary side</p> <p>Open isolation valves</p> <p>Purge. Check no high parts where air could be trapped exist</p> <p>Check pipe size is suitable for nominal flow rate</p>
Temperature does not increase in the buffer vessel and the tap water value is correct.	Recirculation flow rate exceeds charging flow rate.	<p>Check and measure charging and recirculation flow rates. Adjust when necessary.</p> <p>Recirculation FR < 0.6 x Charging FR</p>

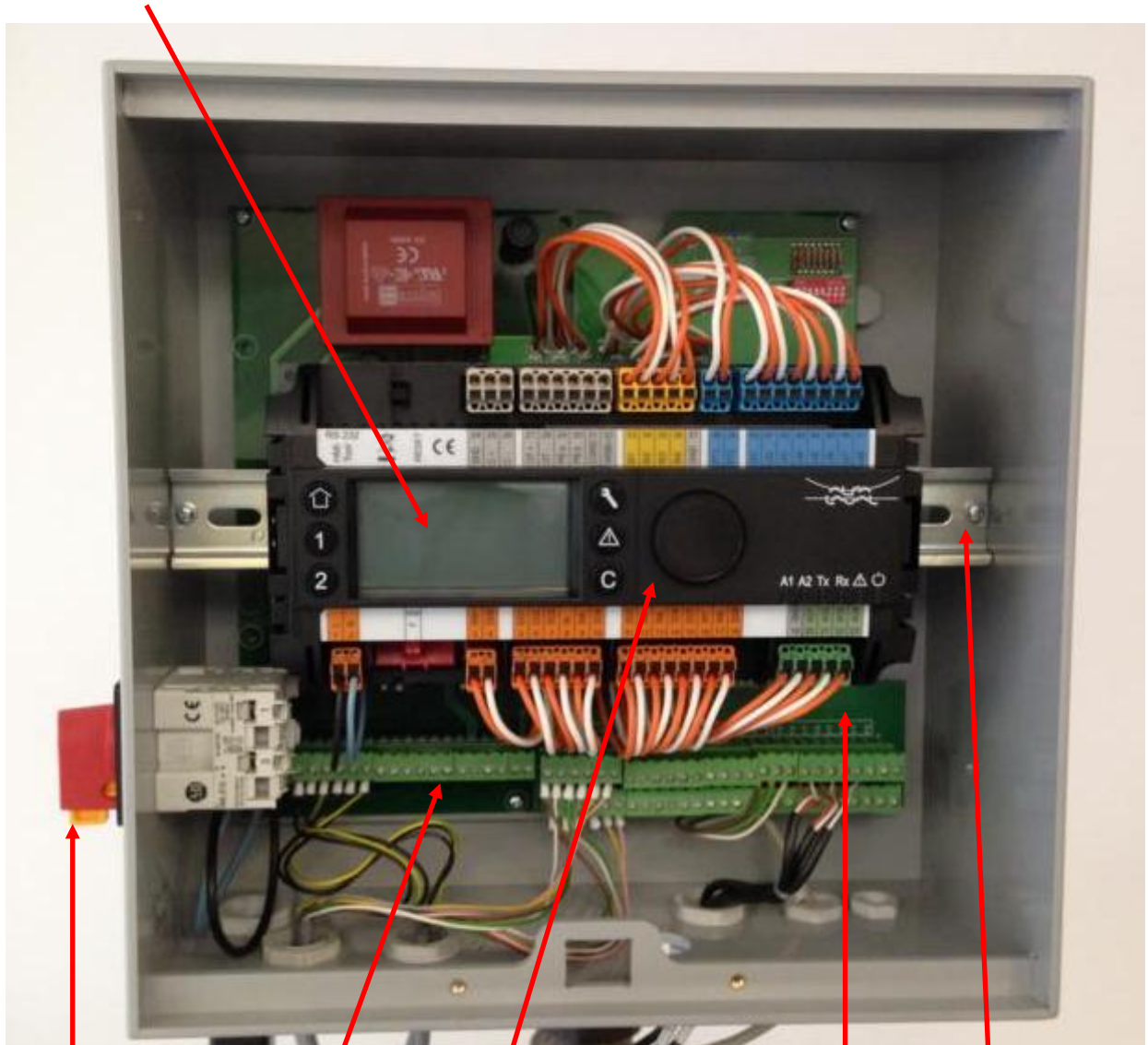
CONTROLLER COMPONENTS

Following components are located behind the front metal plate. If you need to remove it and access internal components, remove the 4 front screws.

The control system consists in three main components:

- Power board CY9-318,
- Micro 3000 Controller,
- Main switch.

KEYPAD / DISPLAY



Bipolar Main Switch

Wires terminal

MICRO 3000

POWER BOARD

DIN rail for controller support

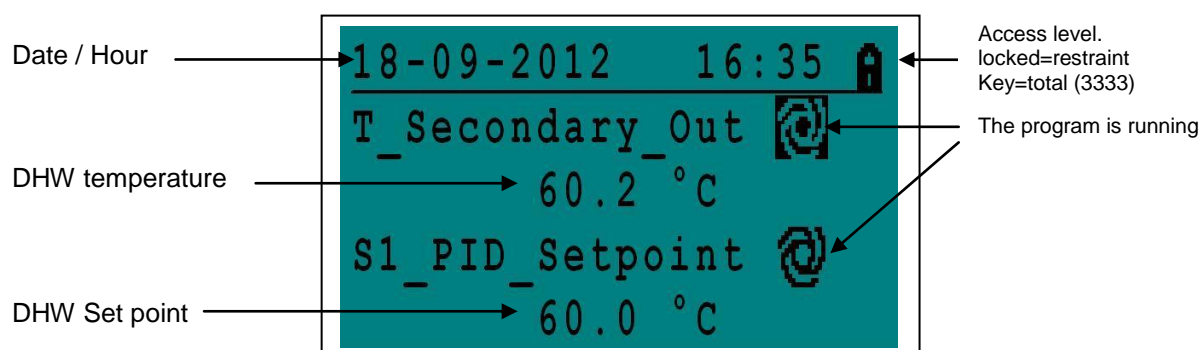
KEYPAD / DISPLAY



KEY	FUNCTION
	Rotative button to scroll into menus and to change values. To activate the line or parameter it is on, just press the button. If you have access to the sub-menu/parameter, it will be black grounded and then you can press the button to access the sub-menu/change parameter. Otherwise, you just pass on it.
	At the opposite, to exit press this key
	To access to the technician menu. REQUIRES A PASSWORD
	Press at any time to come back to home screen
	Alarm menu
	Not used
	Not used
	Relay 1 activated (assignment in configuration sub-menu)
	Relay 2 activated (assignment in configuration sub-menu)
	Data transmission in COM mode
	Data reception in COM mode
	Alarm light
	Controller energized

HOME SCREEN

The display shows the following information :



Access to other menus by rolling the wheel.

COMMAND SYMBOLS



Auto

Datapoint is in automatic operation and can be switched into manual operation.



Manual

Datapoint in manual operation and can be switched into automatic operation.



Today function

Datapoint value can be overridden for a particular time period within the next 24 hours. Datapoint must have a daily time program assigned.



Time Program

Datapoint has a daily time program assigned. Daily time program can be selected and edited.



Edit

Item (datapoint, time program etc.) can be edited.



Add

Item (datapoint, time program etc.) can be added to a list e.g.a datapoint can be put to a list of trended datapoints.



Deleted

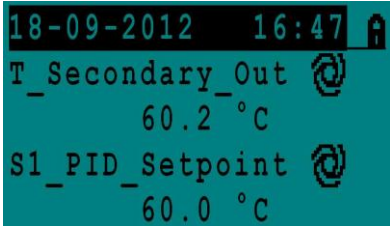
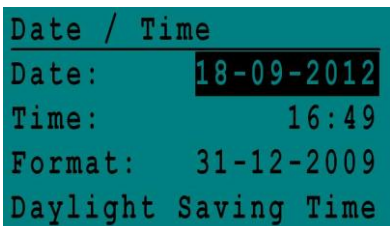
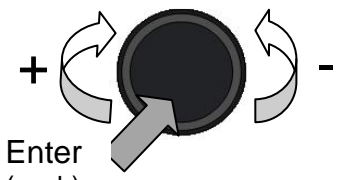

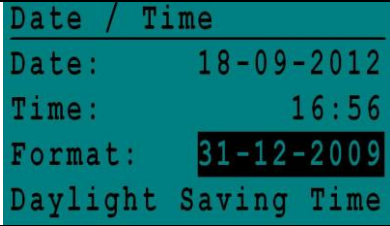
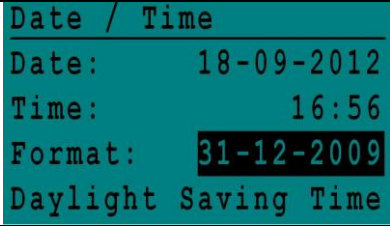


Item can be deleted



Enable/disable

- Checked: item is enabled
- Unchecked: item is disabled






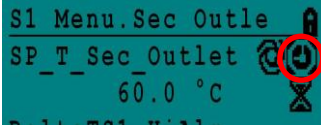
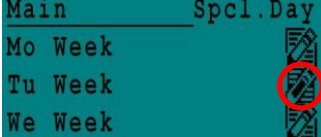




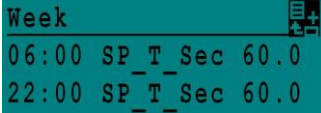



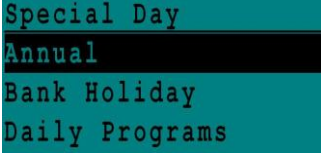

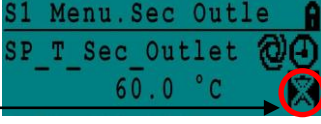
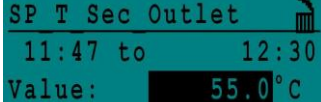
DATE & TIME SET

ACTION	DISPLAY
Rotate the wheel counterclockwise up to the 1st display line.	
Then press the wheel. The screen looks like this :	
Date setting Press the wheel to change the year that is flashing now Increase or decrease the value by rotation. When done, press the wheel again to set next parameter Do the same for month and day	
Time setting Set hour then minutes	
Date Format Choose between yyyy-mm-dd, mm-dd-yyyy, dd-mm-yyyy, dd.mm.yyyy, dd/mm/yyyy	
Daylight Saving Time Hour change between winter/summertime is automatic, but you can redefine and change dates, or disable this function.	
SAVE MODIFICATIONS Once you have validated a setting by pressing the wheel, changes are updated. You can press  or  to go back to home screen	

CHANGING THE TEMPERATURE(S)' SETPOINT(S)

You can set :

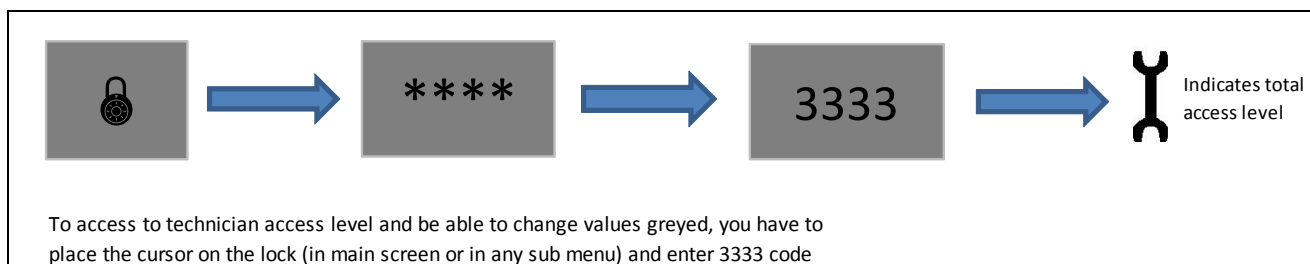
- Identical / Different daily temperatures (unlimited periods possible),
- Holidays' periods (useful for school for example)
- Special days (holidays' periods for example) during the year with specific set points

ACTION	DISPLAY
<p>Access to the main menu</p> <p> These settings are available for both access levels</p> <p>Press  to return to home screen. Then access to the set point time program by turning the wheel clockwise until accessing to the S1 Menu line as shown here :</p> <p>Then press the wheel to enter this menu</p>	
<p>Now focus on the clock logo and press on it</p> <p>Other parameters are not accessible from end user level </p> <p>To access them, you must have technician access level . Please refer to next pages for other settings.</p>	
<p>Define for each day of the week if it is Week temperature or Week end temperature with another value</p> <p>By default, week-end values are deactivated and then set points are the same for all week days.</p> <p>To change time schedule, rotate the wheel until reaching the time/temp settings</p>	
<p>Default temperatures</p> <p>By default, DHW set point on S1 is constantly set at 60°C.</p> <p>You can add extra temperature set points at different times of the day (ex : 55°C at 10h00).</p> <p>These changes will be reported for all days of the week, excluding "week end" temperatures if existing.</p> <p>Example : You want to reduce S1 set point at 55°C at 23h00 instead of 60°C at 22h00.</p> <p>Select the 2nd line and press the wheel. Now change the time and temperature set point like this :</p> <p>If you want to delete this extra temperature program, click on . Otherwise, keep it and press on  to come back one menu level up. You now have 2 different temperature set points at different times. You can add as many time/set point as you want by pressing on  and delete them help with </p>	  
<p>Special days</p> <p>From the schedule menu, place the cursor on "Spcl.Days" as shown :</p>	
<p>You then have 3 possible choices</p> <p><u>Annual</u>=Holidays period where you have to specify : Beginning/End/DHW set point (application : schools, offices...)</p> <p><u>Bank Holiday</u> = special days during the year where set points can be different (ex : Christmas, new year...)</p> <p><u>Daily programs</u> = Particular days where you want to change the temperature set point.</p>	
<p>Quick temperature change</p> <p>You can quickly define a "one time" temperature change. When the change period will have expired, temperature set point will come back to standard time schedule program. Select this icon and click on </p> <p>Then define starting and ending time, and the temperature set point value.</p>	 

Temperatures setting must be in accordance with country's legislation (e.g EN, ISO....norms or recommandations).

TECHNICIAN MENU (both access levels)

To get total access level, it is necessary to enter the password. This is how to do :



MAIN MENU

Main Menu	
T_Secondary_Out	Read Only
S1_PID_Setpoint	Read Only
T_Secondary_Inlet	Read Only
T_Primary_Outlet	Read Only
T_Primary_Inlet	Read Only
T_Renewable1	Read Only
T_Renewable2	Read Only
T_Outdoor	Read Only
Configuration	Sub Menu
S1 Menu Sec.Outlet	Sub Menu
S2 Menu Sec.Inlet	Sub Menu
Delta T (S3-S2)	Sub Menu
S4 Menu Prim Inlet	Sub Menu
S5 Menu Outdoor T	Sub Menu
Thermal Treatment	Sub Menu
SAFETY Function	Sub Menu
Eco Booster Fcts	Sub Menu
Fooling Function	Sub Menu
Pumps Menu	Sub Menu
Solar Menu	Sub Menu
Aquaprot Heating	N/A
230V triac Menu	Sub Menu
Auto Test	Sub Menu
Clear Alarm(s)	Sub Menu


CONFIGURATION SUB-MENU



This menu is not accessible from end-user access level. You must enter the “3333” code

You can activate connected sensors. S1, S2, S3 are present on standard AquaEfficiency and SolarFlow units. Only S4 is optional. If you use the control box as an AlfaPilot in stand alone mode (no AquaEfficiency connected), then you can disable S1 and S2. Nethertheless, this is not mandatory.

Display	Default Value	Description
S1 Activated	Keep 1	0/1 Not activated / Activated sensor
S2 Activated	Set to 1	0/1 Not activated / Activated sensor
S3 Activated	Set to 1	0/1 Not activated / Activated sensor
S4 Activated	Keep 0	0/1 Not activated / Activated sensor
Activer loi CH S5	Keep 0	0/1 Not activated / Activated sensor
Cooling Mode AO1	Keep 0	0=Heating Mode / 1=Cooling Mode
P1P2 Nbr of Pumps	0/1/2	0/1/2 as per equipement
P3P4 Nbr of Pumps	0/1/2	0/1/2 as per equipement
ModBus Factor	1	1..100 to display decimals on modbus values 1=No decimal (integer values, ex : 58°C) 10=0.1 decimals (ex : 58.3°C) 100=0.01 decimals (ex : 58.36°C)
Relay 1 Function	1	0=No action 1=General Default (GD) 2=High temp Alarm (HA) 3=Eco function (E)
Relay 2 Function	2	4=Booster function (B) 5=Thermal Treatment (TT) 6=Pump Fault (PF)

Renewable Config	0	7=Tank loaded (TL) 0=Not used 1=SolarFlow (SF) 2=AlfaStore A (AA) (also called AlfaPilot On/Off) 3=AlfaPilot (AP) (also labelled AlfaStore B)
APilot Inverted	0	0/1 Allows to reverse the Valve #2 signal for AlfaPilot (AO4)  If AlfaPilot mode is used, set to « 1 », due to standard component used
PC distrib	i	i/E : internal / External for Modbus use
ALAFALAVAl_Version	xx	Software version

If S5 Active heating=1, the secondary outlet temperature set point (called “S1_PID_Setpoint” in the main list) will be calculated by an heat curve, function of the outdoor temperature (S5 sensor needed). See later on for the heat curve parameters.

If S5_Active_Heating =1, the heating mode is activated, with heat curve for calculated output setpoint on S1

Both relays 1 and 2 are programmable: you can choose their affectation

Last 3 lines define the renewable mode. You can find back these settings in the solar menu for reading only.

SENSOR 1 MENU

As S1 is the master sensor, you find into this menu main control loop parameters

VALUES/CHANGES IF TECHNICIAN LEVEL	S1 Menu Sec.Outlet			
	SP_T_Sec_Outlet \oplus/\ominus	60°C	DHW Setpoint	Change value in clock program(\oplus) or 1 time change(\ominus)
	Delta T S1 HiAlm	10°C	0-50	High Temperature Alarm if $T_{s1} \geq SP_T_Sec_Outlet + \Delta T_{s1} \text{ HiAlm}$
	High T Alarm Tempo	1 min	0-60	High temp alarm is effective after this temporisation
	High Alarm Auto Reset	0	0/1	0=MANUAL alarm clear / 1=AUTO alarm clear
	High_Alm_Reset	Off	Off/On	Put ON to clear an high temp alarm, then put Off
	P_Main Prop Band	20 (-100 à 100)	In general $20 < P < 40^\circ\text{C}$ Negative values in cooling	$\nearrow P$ to be less reactive $\searrow P$ to be more reactive (be careful of "pumping" effect)
	I Main Integral	50	0-120	$\nearrow I$ to be less reactive $\searrow I$ to be more reactive (be careful of "pumping" effect)
	D Main Derivative	2 sec	0-50	

SENSOR 2 MENU, SECONDARY INLET TEMPERATURE SENSOR

You find here anticipation parameters when temperature suddenly increases or decreases. Action is signal change on control valve and primary pump(s) speed.

The Delta T (S1-S2) function is for variable charging pump units only. When S2 approaches S1 value, an auxiliary control loop reduces charging pump speed down to a minimum settable value (see below); At the opposite, if temperature on S2 decreases, the pump speed will increase.

TECHNICIAN LEVEL ONLY	S2 Menu Sec Inlet			
	Delta T (S1-S2) vit P3P4	8°C	3..20	Secondary charging Pump speed regulation approaching the temperature setpoint. Extra electrical energy savings by keeping minimum speed for recycling loop when tank is loaded. Anticipation on ctrl valve+prim.pump signal, depending of temperature gradient on S2 (ex: quick temp. Loss if tapping =open ctrl valve + accelerate primary pump to save HE+S1 time cst) reverse anticipation action (for cooling mode only)
	P Band DT(S1-S2)	5°C	4..20	
	DZ_GS2 enk/s	0.5	Do not change	
	Inverted output	0	Set 1 if cooling mode	
	Min Speed P3P4	25	20 - 100%	Minimal speed if DHW setpoint almost reached (secondary charging pumps only)

To disable the gradient function, disable S2 in the "Configuration" menu.

DELTA T (S3-S2) MENU

This function limits the primary return temperature, acting on primary pump signal (speed). It acts like a setting valve, limiting the primary flow rate.

VALUES/CHANGES IF TECHNICIAN LEVEL	Delta T (S3-S2)			
	Added control loop on delta T Primary Outlet-Secondary Inlet. Action on primary pump speed only			
	Delta T(S3-S2)	20 K	0-100°C (keep around 25)	DT ctrl loop to influence primary return temp. If you want a small action on DT ctrl loop, set >30
	BP Delta T S3-S2	10 K	Do not change	Value 0-100°C. Big value=Low influence
	Intégrale DT S3-S2	2 sec	Do not change	Value 0-50. Big value=Low influence
	S3 activated	1	0/1	1=Activated function/ 0=Disabled function It is a copy from Configuration Menu

If cooling mode, disable the function by inputting 0 on « S3 activated » line.

S4 MENU PRIMARY INLET SENSOR


If a sensor S4 is connected at the primary inlet, another anticipation function can be activated. When temperature suddenly increases or decreases, an action signal is sent to control valve and primary pump(s) speed.

TECHNICIAN LEVEL ONLY TO ACCESS THIS MENU	S4 Menu Prim Inlet		
	DZ-GS4 en k/s	0.5	Do not change
	Inverted output	0	Set 1 if cooling mode

Anticipation on ctrl valve+prim.pump signal, depending of temperature gradient on S4 (ex: boiler temp. Loss if tapping =open ctrl valve + accelerate primary pump to save HE+S1 time cst) reverse anticipation action (for cooling mode only)

THERMAL TREATMENT FUNCTION

See explanations below

VALUES/CHANGES IF TECHNICIAN LEVEL	THERMAL TREATMENT MENU		
	This function is activated as per a time program. It is disabled by default The user has to define either a 1 sensor mode (fixed duration as per Therm.Tr duration' parameter) OR 2 sensors' mode (variable total duration) until TT.Max try time During this time interval the effective treatment starts as soon as DeltaT (S1-S2)<=Delta T S1S2 ThTr' parameter value		
	ThTr_Setpoint	70°C	Usual value
	TrTh_Activated 	Off	Off/On
	Sensor_Nbr	Auto	Auto/1 sensor/2 sensors
	ThermTr Duration	1 min	1-240 min (4 hours max)
	Fixed duration (1 sensor)	0	0/1
	TT Max try time	1 min	1-240 min (4 hours max)
	DeltaT S1S2 ThTr	7°C	1 - 20°C
	Inhibition time	30 min	0-180 (0 à 3 hours)

Usual value

Enable or Disable the function as per clock program

Adjust value according to the installation + buffer vessel capacity

IF Auto or 2 sensors mode

If during TT Max try time, delta T (S1-S2) is higher than preset value ->thermal treatment failure

High temp alarm inhibition time afre thermal treatment

Thermal treatment activates by defining a clock setting (On or Off)

SAFETY FUNCTION

Note that in case of high temperature alarm, primary pump(s) are stopped

VALUES/CHANGE IF TECHNICIAN LEVEL	SAFETY Function		
	This function activates the 4 pumps' power relays at the same time without considering ipsothermic contacts' inputs. Furthermore, you can define the voltage sent to the 0-10V pumps'signal, then to choose pumps'speed (for variable speed pumps) You can enable this function from base access level.		
	SAFETY_Speed	75%	5-100%

SAFETY FCT

Off

Off/On



In case of high temperature alarm on S1, primary pump(s) is(are) stopped, even if the function is activated.

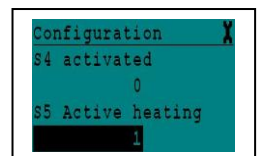
ECO & BOOSTER FUNCTIONS

VALUES/CHANGE IF TECHNICIAN LEVEL	Eco Booster Fcts		
	You can activate 1 or the other function or both at the same time		
	ECO : Activates a temporisation as soon as valve is closed less than hystérésis valve' and DHW is higher than Setpoint - "Eco Hysteresis" parameter		
	After this temporisation, the start/stop contact of primary variable speed pumps OR primary cst speed pumps' power supply is stopped.		
	Booster : If DHW temperature is dropping down faster than "Booster Gradient", the second primary pump (if existing) is energized, to increase the primary flow rate. Function stops when DHW temperature is back to the setpoint value and after "Booster Tempo" parameter		
	1:Eco 2:Boo 3:EcoB	0	None/Eco/Booster/Eco+Booster
	Fct_Selection	Normal	Normal/Eco/Boost/EcoBoost
	Eco Delay	5 min	1-30 min
	Eco Hysteresis	5°C	1-20°C
	Valve Hysteresis	4%	1-10%
	Booster Delay	2 sec	0-30 sec
	Booster Gradient	1°C/s	1 à 5°C/sec

As a reminder

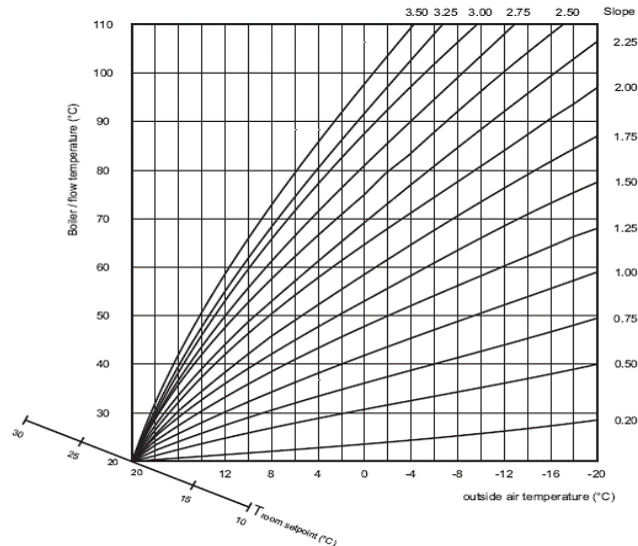
S5 MENU- OUTDOOR TEMPERATURE

This sub-menu allows to adjust the heat curve parameters : slope + ambient temperature influence on clock program. To be effective, you MUST have selected S5 Active Heating=1 in the Configuration menu.



<p>Access this sub-menu to adjust requested ambient temperature if necessary (it is the inside ambient temperature set point).</p> <p>You can check/change this by clicking on the clock logo</p> <p>This temperature will apply a set point correction to the heating curve. 20°C ambient is the reference temperature, where no correction occurs (see diagram below).</p>	
<p>By default it is set to 20°C from 6h00 (am) to 22h00 (10 pm) and then to 15°C from 22h00 (10 pm) to 6h00 the next day.</p> <p>If you want to change this time program, please refer to "HOW TO CHANGE THE TEMPERATURE(S)' SETPOINT(S)" pages before.</p>	
<p>On next lines :</p> <p>Do not change the heat curve curvature (factory setting)</p> <p>You can adjust heat curve slope. Default value=1.6 (see diagram below) meaning :</p> <p>If -20°C outdoor temperature, Calculated setpoint≈85°C</p> <p>If +20°C outdoor temperature, calculated set point=20°C</p> <p>By example, If you want 90°C calculated set point by -20°C outdoor, set to ≈1.8</p> <p>Now if you set at this time an ambient temperature at 15°C, the set point will be decreased to ≈87°C</p>	
<p>If you don't use an outdoor temperature sensor, DO NOT FORGET TO SET "S5 Active Heating"=0 in the configuration menu, to allow the time scheduled set point (clock program) on S1.</p>	

The weather-compensated controller requires a heating curve for each heating circuit to determine the correct flow temperature setpoint according to outside air temperature. The heating curve graph indicates the relationship between outside air temperature and associated flow temperature.



For radiator heating systems, a heating curve slope 1.6 and curvature 1.33 is the default setting. The higher the curvature value, the more pronounced the curvature. Recommended curvature values are:

- Floor heating systems 1.1 (with a slope of 0.8 and maximum limit of flow temperature set to highest value, for example, 50)
- Standard radiators or panel-type radiators 1.3
- Convectors 1.4 through 1.6

FOOLING FUNCTION

VALUES/CHANGE IF TECHNICIAN LEVEL	Fooling Function		
	Activates an alarm if heat exchanger is considered fooled/lime scaled		
	Fooling_alm activ	0	0/1
	Fooling_alarm	Normal/Default	
	SP_Fooling	65°C	60-80

0=Disabled / 1=Enabled

READ ONLY

Depends of HE type + Primary temperature inlet

PUMPS'MENU

Pumps Menu			
VALUES/CHANGE IF TECHNICIAN LEVEL	P12 Diff.work time	100 hrs	1 - 1000 hours
	P12 Permut.Type	2	0=Fixed time 1=Fixed time+ diff.work time 2=Immediately after Diff.hrs
	P12 Permut.Period	0	0=None 1=Daily 2=Weekly 3=Monthly
	P12 Permutation day	1	From 1st to 31st
	P12 Permutation Hour	10h00 pm	00h00 - 23h59 (11h59 pm)
	P1P2 Superposition	6	0-10 seconds
	P34 Diff.work time	100 hrs	1 - 1000 hours
	P34 Permut.Type	2	0=Fixed time 1=Fixed time+ diff.work time 2=Immediately after Diff.hrs
	P34 Permut.Period	0	0=None 1=Daily 2=Weekly 3=Monthly
	P34 Permutation day	1	From 1st to 31st
	P34 Permutation Hour	10h00 pm	00h00 - 23h59 (11h59 pm)
	P3P4 Superposition	6	0-10 seconds
	Pump_Fault_Reset	Off	Off/On

P1 or P2 Working time

See P12 Permut Hour

If diff reached at this time, pump shift

Don't care of permutation day+hour

Time to start P2(P1) before stopping P1(P2), to let the other pump start

P1 or P2 Working time

See P12 Permut Hour

If diff reached at this time, pump shift

Don't care of permutation day+hour

Time to start P2(P1) before stopping P1(P2), to let the other pump start

To clear a pump default, set to On, then Off

Copy from the Clear alarm(s) menu

SOLAR MENU

AquaEfficiency can be coupled with a SolarFlow or AlfaPilot working mode, allowing to take benefit of a solar energy with primary storage tank installation or alternative energy recovering installation. This using the same control box.

The Micro 3000 combined with extra sensors can pilot a second 0-10V signal valve actuator, allowing to direct the outlet primary flow towards the primary storage vessel or towards the boiler (or heat generator). This distribution can be binary (open OR closed valve) in AlfaStore A configuration or proportional in AlfaStore B (=AlfaPilot) configuration. Note that AlfaStore A needs 1 extra sensor (Renewable1) and AlfaStore B needs 2 extra sensors (Renewable1+2) + optionally outdoor temperature sensor S5.

VALUES CHANGE IF TECHNICIAN LEVEL	Solar Menu			
	Covers multiple systems'configurations : Solar Flow AlfaStore A / AquaEfficiency + AlfaStore A AlfaStore B / AquaEfficiency + AlfaStore B			
	Solar_Option	No Option	No/SolarFlow/AlfaStoreA/B	Config selection
	Store B Inverted	Off	Off/On	Depending of used valve type, it is sometimes necessary to invert the opening/closing travel. AlfaStore B=On
	DT Récup Min	5	-50 à +50	Use a negative value for a cooling mode Heating mode=Positive value (5-50°C)
	Distrib_Setpoint $\oplus \pm$	65/70°C	Clock Progr.+1 time progr.	For AlfaStore B, setpoint relative to Srenewable2(Pt2) and regulation around this setpoint via AO4 signal output (Valve No.2)
	PC_Distrib_Com	Internal	internal/external	INTERNAL
	PC_Distrib_distant	65°C		

Solar Flow Only

An added sensor Pt1 is necessary and will have to be placed before the primary inlet, in a primary storage buffer vessel (solar for example)

In this mode, the unit will be placed in stand by (valve closed+pump stopped) until $Pt1 \geq S2 + DT \text{ Recup_Min}$

When primary temperature is hot enough, the unit will be started normally and will regulate on secondary outlet temperature, S1

AlfaStore A Only

An added on/off control valve (Valve No.2 wired on AO4) associated to S3 and Pt1 sensors allows the alfaStore A mode

An added sensor Pt1 is necessary and will have to be placed before the primary inlet, in a primary storage buffer vessel (solar for example)

As soon as $S3 > (Pt1 + DT \text{ Recup_Min})$, valve 2 wide opens (continuous 10 volts signal), diverting the primary return flow towards primary vessel and then to send hot water towards the generator (boiler for example) to reduce energy consumption

AlfaStore B Only

An added control valve (Valve No.2 wired on AO4) associated to S3, Pt1 and Pt2 sensors allows the alfaStore B mode

Added sensor Pt1 is necessary and will have to be placed before the primary inlet, in a primary storage buffer vessel (solar for example). Pt2 on the generator (boiler) inlet

As soon as $S3 > (Pt1 + DT \text{ Recup_Min})$, valve 2 regulates proportionnaly around Distrib_Setpoint

If an outdoor sensor is connected on S5 input, Distrib_Setpoint value can be higher, due to heat curve result. You don't have to activate S5 in the "Configuration" Menu.

230V TRIAC MENU



2 different Operating modes : If Multi P is On, you must set ByPass S4S3 to Off. If Multi P is Off, you can set ByPass S4S3 to On

VALUES CHANGE IF TECHNICIAN LEVEL	230V TRIAC Menu			
	This menu allows to use Triac output in 2 different ways (no cumulable)			
	1- Clock pulse, using time program. Pulse duration settable 2- Energise a bypass component if delta T (S4-S3)>set value Both functions can not be combined			
	Multi P	Off	Off/On	Pulse(s) function
		\oplus	Clock program	
	Pulse Duration	5 sec	1-3600	OR
	Bypass S4S3	Off	Off/On	ByPass Function
	DeltaT Bypass	30°C	5-50	

AUTOTEST MENU

This sub-menu allows to test analogic and digital outputs. It is possible to run an automatic sequence or to test manually each output individually.

In case of Auto test (automatic sequence), it is possible to reduce or increase tests' temporizations. Pump, valve and relays test times can be adjusted individually. The time test value will impact on the total auto test time sequence.

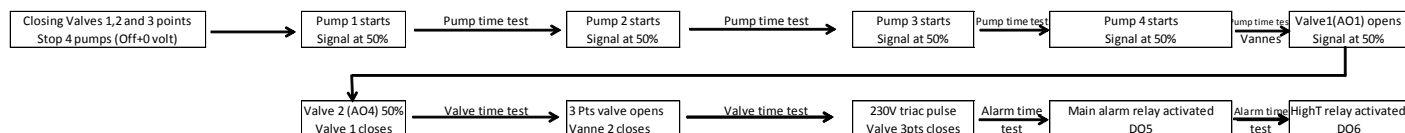
VALUES CHANGE IF TECHNICIAN LEVEL	AutoTest		
	This menu allows to start an autotest that will activate binary and analogic outputs, to activate valves, pumps, relays, 230V triac It is also possible to read/write these different values manually on following lines		
	Start AutoTest	0	0/1
	Pump time test	16 sec	1-60 sec
	Valve time test	16 sec	1-60 sec
	Alarm time test	5	1-60 sec
	Cmd_P1	On/Off	
	Cmd_P2	Off/On	
	Speed_P1P2	xx %	0-100 %
	Cmd_P3	On/Off	
	Cmd_P4	Off/On	
	Speed_P3P4	xx %	0-100 %
	High_Temp_Alarm	Off	On/Off
	Main_Alarm	Off	On/Off
	Triac_Output	Off	On/Off
	Valve signal	xx %	0-100 %
	Valve2 signal	xx %	0-100 %
	3 Pts valve signal	xx %	0-100 %

Set 1 to start autotest. When finished, value is back to zero

Temporisations to adjust test duration

Individual output reading / writing

Autotest



CLEAR ALARM(S) MENU

MODIFICATION POSSIBLE SI NIVEAU ACCESS TECHNICIEN	Clear Alarm(s)		
	This menu allows to clear alarm(s)		
	High_Alm_Reset	Off	Off/On
	Pump-Fault_Reset	Off	Off/On

Put On to clear alarm, then put Off


Put On to clear alarm, then put Off

CHANGE PASSWORD



If you want to change the actual password, do not forget to remember it, by a way or another. If lost, you can't access to the technician level and only the S1 temperature setpoint can be changed. All other parameters are then either read only, or hidden (configuration menu for example).


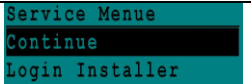
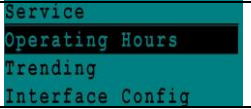





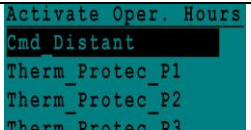
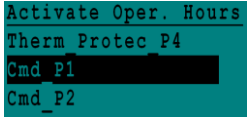
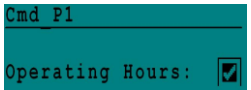

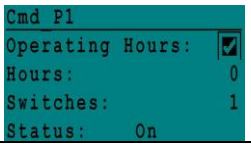
Note that to change the password, you must already have the technician level (Level 3). If you don't have Press on "Login Installer" before and enter the current password.

Press  key to access to Service Menu, go to "Login Installer" line then enter the password if not done before accessing this menu then press the wheel to validate	<div>Service Menu</div> <div>Continue</div> <div>Login Installer</div>
Click on "Change Password" then	<div>Enter your Password</div> <div>****</div> <div>Next</div> <div>Change Password</div>
Level 2 password is not use in the program. Go directly to Level 3 line and then click on the password to change it	<div>Change Password</div> <div>Level 2: 2222</div> <div>Level 3: 3333</div> <div>Installer Service</div>

SERVICE MENU

OPERATING HOURS

You can check operating hours of some parameters.




Press  key to access to Service Menu, then click on "Continue"	
Select "Operating Hours" menu	
<p>If it is the 1st time you access to this menu, the list is empty. Otherwise, you will read already selected variables.</p> <p>To add a variable you want to trend, click on  logo</p> <p>Then, select in the list the points you want to trend.</p>	
<p> See the points' list in the following table</p> <p>Example : We want to record the primary pump 1 operating hours. We will select "Cmd_P1" into the list and click on it with the wheel.</p> <p> Then do not forget to tick it, otherwise the point won't be in the list</p> <p>When you go back in the menu ( key), you can now see the list with "Cmd_P1" parameter, and on the right side, the operating hours.</p> <p>If you want more details, click on this line to make appear another screen Here you can read that P1 has been operating less than 1 hour, has been switched 1 time and is actually On.</p>	    
Proceed the same way to add extra variables.	

Variables' list :


Name	Description
Cmd_Distant	Binary input (VFC) to remotely Start/Stop the unit
Therm_Protec P1	Ipsothermic input from P1 pump
Therm_Protec P2	Ipsothermic input from P2 pump
Therm_Protec P3	Ipsothermic input from P3 pump
Therm_Protec P4	Ipsothermic input from P4 pump
Cmd_P1	P1 command. 1=On / 0=Off. It is the Start/Stop input of the pump
Cmd_P2	P2 command. 1=On / 0=Off. It is the Start/Stop input of the pump
Cmd_P3	P3 command. 1=On / 0=Off. It is the Start/Stop input of the pump
Cmd_P4	P4 command. 1=On / 0=Off. It is the Start/Stop input of the pump
Eco	Function Eco activated
Booster	Function Booster activated
High_Temp_Alarm	High temperature alarm on S1 sensor
Main_Alarm	General Alarm
Triac_Output	230v Triac output state.
AFF_leg_active	Thermal treatment activated
Multi_P	230V Triac pulse
SAFETY_FCT	The safety function state
Tank load	Tank loaded
ThTr_Activated	Thermal treatment running

TRENDING


You can record a lot of different variables listed in the table below. It can be temperatures' measurement, valves or pumps' signals, isothermic contacts, alarms, thermal treatments....

Press  key to access to Service Menu, then click on "Continue"	<div>Service Menu</div> <div>Continue</div> <div>Login Installer</div>
Select "Trending" menu	<div>Service</div> <div>Operating Hours</div> <div>Trending</div> <div>Interface Config</div> <div>Time Program</div>
Then this click on line	<div>Trending</div> <div>Points in Trend</div> <div>Display Trend Buffer</div>
<p>If it is the 1st time you access to this menu, the list is empty. Otherwise, you will read already selected variables.</p> <p>To add a variable you want to trend, click on  logo</p> <p>Then, select in the list the points you want to trend.</p> <p> See the points' list in the following table</p> <p>Example : We want to record the Secondary outlet temperature (please refer to table below). We select S1 into the list. Go to "S1" and click on it with the wheel.</p>	<div>Points in Trend</div> <div>Set Points in Trend</div> <div>Pilot_Signal</div> <div>Pt1</div> <div>Pt2</div> <div>S1</div>
<p>Then validate the point recording by ticking it (otherwise the point is in the list but is not recorded)</p> <p>There are 2 ways to record</p> <p>1- Record only on temperature change (recommended method). This saves memory and allows a longer sampling period compared to method 2. Select the record hysteresis. In our case, we want to record every 1°C temperature change. You can change the hysteresis value by clicking on it.</p> <p>2- Record on a time base, whatever the temperature changes or not. Note that this method consumes memory, especially if you select a low time base. Here we have selected a 10 minutes time base recording (1 record every 10 minutes).</p> <p>If you to use method 1, set "Trend cycle" to zero. If you want to use method 2, set "Trend Hyst" to zero.</p>	<div>S1</div> <div>Trend Log: <input checked="" type="checkbox"/></div> <div>Trend Hyst: 1</div> <div>Trend Cycle: 0min</div> <div>S1</div> <div>Trend Log: <input checked="" type="checkbox"/></div> <div>Trend Hyst: 1</div> <div>Trend Cycle: 10min</div>

DISPLAY TREND BUFFER


Press  key to access to Service Menu, then click on "Continue"	<div>Service Menu</div> <div>Continue</div> <div>Login Installer</div>
Select "Trending" menu	<div>Service</div> <div>Operating Hours</div> <div>Trending</div> <div>Interface Config</div> <div>Time Program</div>
Then this click on "Display Trend Buffer" line	<div>Trending</div> <div>Points in Trend</div> <div>Display Trend Buffer</div>
Select the variable you want to read (S1 in our case)	<div>Trend Buffer</div> <div>S1</div>
You can read Date/Time and number of records actually in memory Click on it	<div>S1</div> <div>21-09 14:07 60</div>
Then you can read Date, Time and the value at this moment (we are pointing here S1=58°C on 21 st of September at 14h22).	<div>S1</div> <div>21-09 14:22 58</div> <div>21-09 14:22 60</div> <div>21-09 14:22 59</div> <div>21-09 14:22 57</div>

INPUT / OUPUTS VISUALISATION

Press  key to access to Service Menu and select “Continue” or “Login Installer” to access to technician level.
 Scroll down to “Point Data” line
 You can from Point Data sub-menu, read or change binary or analog outputs to start/stop a pump, open/close control valve or activate the 230V triac output for example.

Point Data	internal parameters+I/O visualisation	
Analog input		→ Sensors' values
Pseudo Analog		can be setpoints or internal parameters
Analog Output		→ Valve and pumps' output signals
Binary input		→ Ipsothermic contacts from pumps, remote contact
Pseudo Binary	internal flags	
Binary Output		→ Pumps'start/stop contacts, relays contacts, 230V triac
Totalizer	N/A	
Remote Analog	N/A	
Remote Binary	N/A	
System Data	(System infos)	
Parameters	N/A	
Date/Time (clock settings)		
System Info		Hardware/Software infos (version, date)
Interface Config		see above, same menu
DDC Times		Program's time constant
Flash memory (infos on flashing)		



ALARMS MENU

Alarms' Menu 	
Alarm Buffer	List of all events with Date, time, type of event
Points in Alarm	Lists points actually in alarm condition
Critical Alarms	Lists points actually in critical alarm condition Critical alarm are important alarms, like high temp.
Non-Critical Alarms	Lists points actually in non-critical alarm condition These alarms are more informations, like power failure

The example bellows describes the safety function that has been activated manually the 19th of June 2012 at 15h40 and the speed pumps has been set manually to 75% at 15h41. Then Safety speed has been set in Auto mode at 100% at 15h51 and safety function has been set to auto mode, stopping the safety function at 15h52.

Ex:	15:52 SAFETY_FCT	→	19-06-2012 15:52 SAFETY_FCT On Auto operation
	15:51 SAFETY_Speed	→	19-06-2012 15:51 SAFETY_Speed 100% Auto operation
	15:41 SAFETY_Speed	→	19-06-2012 15:41 SAFETY_Speed 75% Manual operation
	15:40 SAFETY_FCT	→	19-06-2012 15:40 SAFETY_FCT On Manual Operation

FACTORY RESET

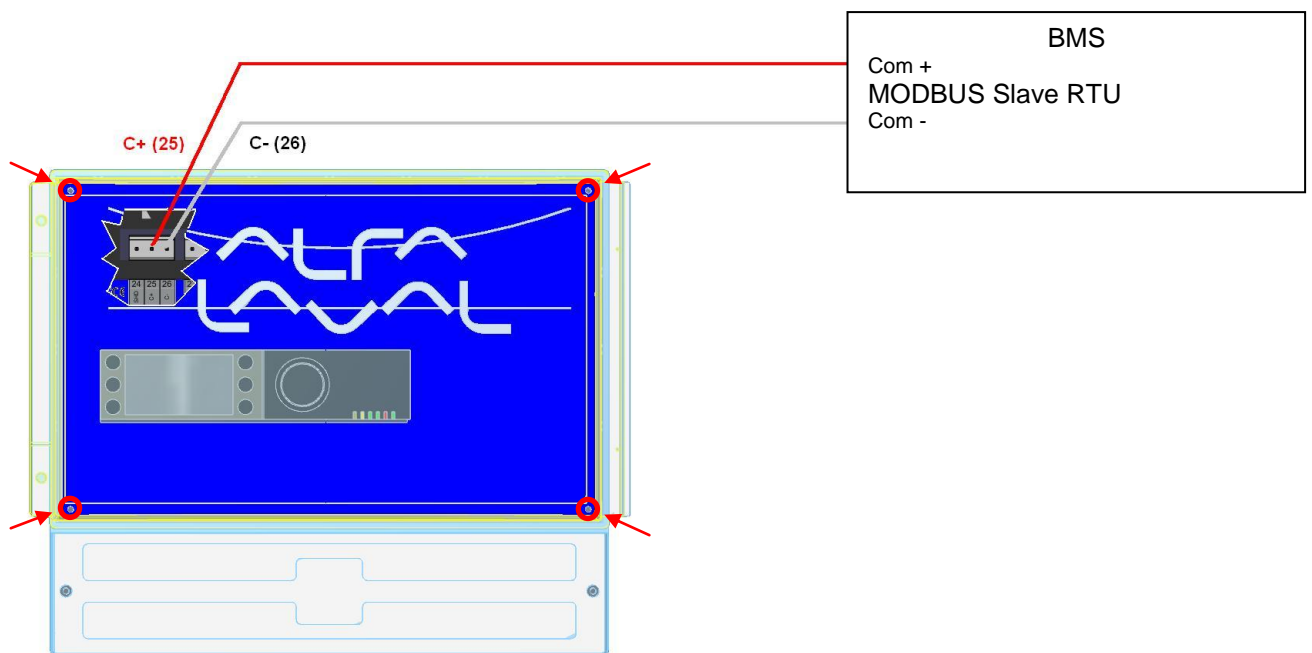
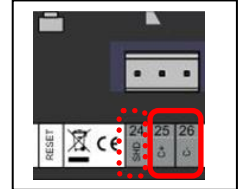
Press both  and  for 5 seconds. Display appears as shown here. rotating the wheel, select the last line (program name with a star at the end). Press the wheel a few seconds and the program will start after 1 minute. Settings are now factory settings. Adjust if necessary the pumps' number and sensors influence in the configuration menu.

```

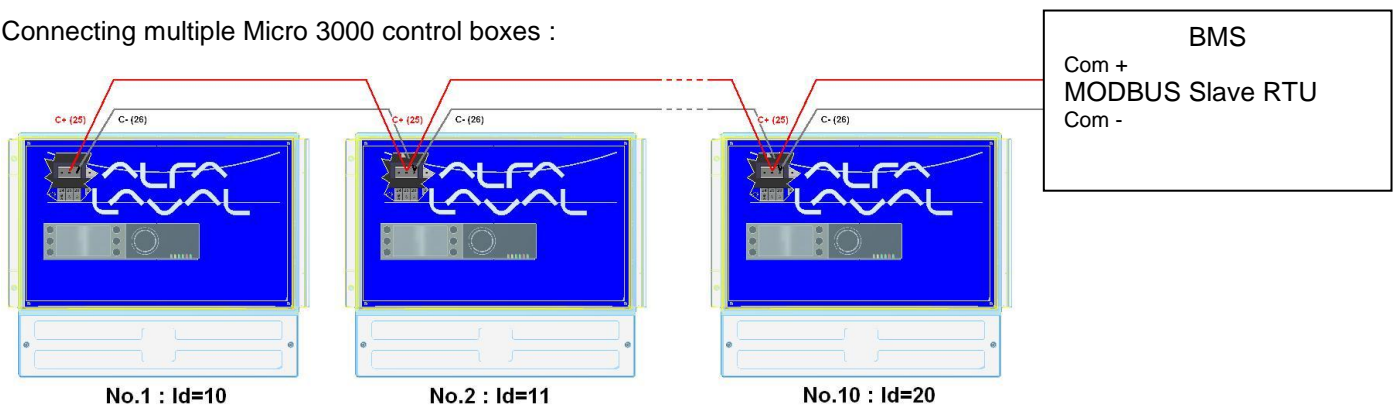
15-10-2012    13:41
Wiring Check
C-Bus:        [X]
CTR# 1        19200
AL 09 2ST 12-10-12 *
```

MODBUS COMMUNICATION

The controller includes a MODBUS SLAVE communication protocol. Connection between BMS (building management system) and Micro 3000 requires 2 polarized wires on C+ and C-, respectively labeled 25 and 26 on controller C Bus terminal. Cable shield connection is not mandatory, but can be done help with 24 terminal. To do this, it is necessary to unscrew the front panel (4 screws at each box angle).



Connecting multiple Micro 3000 control boxes :



Rules to respect :

Max lenght between BMS and farer control box : 500 meters

Connection continuity (C+ and C-) has to be done directly on the controller C Bus terminal, without using derivation boxes. Respecting this, there are 2 wires per terminal, except the farer control box.

MODBUS POINTS' LIST :

MODBUS PARAMETERS / PARAMETRES MODBUS :	Speed / Vitesse : 38400
	Bit number / Nbre de bit: 8
	Stop bit / Bit de stop : 1
	Parity / Parité : None / Aucune
	Mode : RTU

In case of multiple controllers, change ModBus slave number
En cas d'échangeur en cascade changer le N° d' esclave du mode bus

ModBus Points (English)	Points ModBus (Français)	MODBUS adress** Adresse ModBus**	Type	Sub-type Sous-type	Mode	Value Valeur	Comment Commentaire
-------------------------	--------------------------	----------------------------------	------	--------------------	------	--------------	---------------------

Read Only digital / Lecture seule Digitaux							
PD_Cmd_P1	PD_Cmd_P1	15	HR_16	BOOL	R	0=Off, 1=On	Command(e) P1
PD_Cmd_P2	PD_Cmd_P2	16	HR_16	BOOL	R	0=Off, 1=On	Command(e) P2
PD_Cmd_P3	PD_Cmd_P3	17	HR_16	BOOL	R	0=Off, 1=On	Command(e) P3
PD_Cmd_P4	PD_Cmd_P4	18	HR_16	BOOL	R	0=Off, 1=On	Command(e) P4
PriP1_Alarm_On	PriP1_Alarme_Ma	19	HR_16	BOOL	R	0=OK, 1=Alarm	P1 Fault / Défaut P1
PriP2_Alarm_On	PriP2_Alarme_Ma	20	HR_16	BOOL	R	0=OK, 1=Alarm	P2 Fault / Défaut P2
SecP3_Alarm_On	SecP3_Alarme_Ma	23	HR_16	BOOL	R	0=OK, 1=Alarm	P3 Fault / Défaut P3
SecP4_Alarm_On	SecP4_Alarme_Ma	24	HR_16	BOOL	R	0=OK, 1=Alarm	P4 Fault / Défaut P4
PD_High_Alarm	PD_Alarme_Hte	27	HR_16	BOOL	R	0=OK, 1=Alarm	S1 High Temp Alarm/Alarme haute S1
PD_Main_Alarm	PD_Alarme_Synt	28	HR_16	BOOL	R	0=OK, 1=Alarm	General default / Défaut synthèse
Fooling_Alarm	Alarme_Encrasst	30	HR_16	BOOL	R	0=OK, 1=Alarm	Fooling alarm (S3) / Alarme encrassement (S3)
ThermTr_Alarm	Alarme_TrTh	32	HR_16	BOOL	R	0=OK, 1=Alarm	Therm.Treat. Failed / Echec traitement therm.
PD_Triac_Output	PD_Sortie_Triac	33	HR_16	BOOL	R	0=Off, 1=On	230V Triac output / Sortie triac 230V
SAFETY_FCT	FCT_SECOURS	35	HR_16	BOOL	R	0=Off, 1=On	Safety function / Fonction Secours
AFF_Leg_active	AFF_TrTh_actif	36	HR_16	BOOL	R	0=Off, 1=On	Therm.Treat. On going / Trait. Therm. En cours
Remote_Control_Rev	Contrl_Distant_Inv	37	HR_16	BOOL	R	0=Off, 1=On	Remote control / Contrôle distant
PC_Distrib_Com	PC_Distrib_Com	38	HR_16	BOOL	R	0=Internal, 1=External	AlfaPilot external setpoint/Consigne AlfaPilot externe
AFF_FD20	AFF_FD20	39	HR_16	BOOL	R	0=Off, 1=On	Heating mode / Mode chauffage
AFF_FD22	AFF_FD22	40	HR_16	BOOL	R	0=Off, 1=On	Cooling mode / Mode froid
BoostMode	BoostMode	41	HR_16	BOOL	R	0=Off, 1=On	Booster Function / Fonction Booster
EcoMode	EcoMode	42	HR_16	BOOL	R	0=Off, 1=On	Eco Mode / Mode Eco
PD_Pumps_fault	PD_defaut_pompes	43	HR_16	BOOL	R	0=Off, 1=On	Synthese Pump(s) fault / Synthèse Défaut pompe(s)
Tank_load	Charge_ballon	44	HR_16	BOOL	R	0=Off, 1=On	Tank load / Charge ballon
(16 bit integer/Entier 16 bit)*							

Read Only Analogic / Lecture seule Analogiques							
PA10_Speed_P1P2	PA10_Vitesse_P1P2	45	HR_16	int16	R	%	Primary pump signal / Signal pompe primaire
PA10_Speed_P3P4	PA10_Vitesse_P3P4	46	HR_16	int16	R	%	Secondary pump signal / Signal pompe secondaire
PA10_valve1	PA10_Vanne1	47	HR_16	int16	R	%	Control vlave 1 signal / Signal servomoteur 1
PA10_valve2	PA10_Vanne2	48	HR_16	int16	R	%	Control vlave 2 signal / Signal servomoteur 2
PC_AStoreB	PC_AStoreB	49	HR_16	int16	R	°C	AlfaPilot Setpoint / Consigne AlfaPilot
S1_10	S1_10	50	HR_16	int16	R	°C	Sensor 1 measurement / Mesure Sonde S1
S2_10	S2_10	51	HR_16	int16	R	°C	Sensor 2 measurement / Mesure Sonde S2
S3_10	S3_10	52	HR_16	int16	R	°C	Sensor 3 measurement / Mesure Sonde S3
S4_10	S4_10	53	HR_16	int16	R	°C	Sensor 4 measurement / Mesure Sonde S4
S5_10	S5_10	54	HR_16	int16	R	°C	Sensor 5 measurement / Mesure Sonde S5
S6_10	S6_10	55	HR_16	int16	R	°C	Sensor 6 measurement / Mesure Sonde S6
pt1_10	pt1_10	56	HR_16	int16	R	°C	Sensor P11 measurement / Mesure Sonde Pt1
pt2_10	pt2_10	57	HR_16	int16	R	°C	Sensor P12 measurement / Mesure Sonde Pt2
DT_recup_min10	DT_Recup_Min10	61	HR_16	int16	R	°C	Min DT energy recov / Delta T min récup énergie
S1_PID_SP_10	PC_S1_PID_10	62	HR_16	int16	R	°C	Calculated S1 setpoint / Pt de consigne calculé S1
SP_T_Amb_S5_10	PC_T_Amb_S5_10	63	HR_16	int16	R	°C	Ambiant temp. Setpoint / Consigne T ambiante
Solar_Option_Ana	Solar_Option_Ana	64	HR_16	int16	R	0=no Option 1=Solar Flow 2=Alfa_store A 3=AlfaPilot (Alfa_Store B) 4=Aqua_Heating	0=Pas d' Option (type AquaFirst, AquaEfficiency) 1=Solar Flow 2=Alfa_store A 3=AlfaPilot (Alfa_Store B) 4=Aqua_Heating
(16 bit integer/Entier 16 bit)*							

Read-Write digital / Lecture-Ecriture Digitaux							
High_Alm_Reset	Reset_Alm_Hte	201	HR_16	BOOL	R/W	1=Reset fault. Pulse point necessary 30 seconds On/Off	
Pump fault Reset	Reset_Def_Ppes	202	HR_16	BOOL	R/W	1=Acquittement. Point impulsionnel On/Off pendant 30 secondes	
(16 bit integer/Entier 16 bit)*							

Read-Write Analogic / Lecture-Ecriture Analogiques							
DeltaT_ByPass	DeltaT_Bipasse	210	HR_16	int16	R/W	°C	Delta T bypass (S4-S3) / Delta T bipasse (S4-S3)
SP_T_Sec_Outlet	Consigne_S1	211	HR_16	int16	R/W	°C	S1 fixed setpoint (DHW) / Consigne fixe S1 (ECS)
PC_Distrib_distant	PC_Distrib_distant	212	HR_16	int16	R/W	°C	AlfaPilot external setpoint / Consigne externe AlfaPilot
ThTr_setpoint	PC_TrTh	213	HR_16	int16	R/W	°C	Thermal treatment setpoint / Consigne trait. thermique
(16 bit integer/Entier 16 bit)*							

* For some supervisors, it is necessary to implement BOOL as int16

** For some supervisors, remove 1 to adress number (ex : S1_10 adress=49)

* Sur certains superviseurs, renseigner les digitaux comme entiers 16 bit





** Sur certains superviseurs, enlever 1 au numéro du point modbus (ex: S1_10 à l'adresse 49)

COMMISSIONING REPORT

Installation

Tightening dimension control	
Air vent position	
Settling Pot presence on primary	
Boiler Brand, installation and power	
Mixing bottle required / Presence	
Balancing valve presence on Indirect (Semi Instantaneous) installations	
Close drain valves	
Primary conformity:	
Secondary conformity:	
Accessibility of unit and components	

Configuration menu

Sensors				
Pumps				
Solar menu				
Other				
Primary Pumps:	Accept		Accept	
Pump 1	<input type="text"/>	0-10V sign:	Pump 2	<input type="text"/>
Secondary Pumps:	Accept		Accept	
Pump 3	<input type="text"/>	0-10V sign:	Pump 4	<input type="text"/>
Electrical bridges control for pumps on power plate				
Pump1	Pump2	Pump3	Pump4	
Sensors' switches control				
Pt1	Pt2	S1	S2	S3
S4	S5	S6		
Control valve working				

Settings

DHW secondary outlet T° setting: S1				
PID setting				
High alarm setting	<input type="text"/>	Type	Manual	Auto
Thermal Treatment	<input type="text"/>	Setting	Time	
Efficiency Delta T setting: S3-S2				
Eco function activation				
Booster function activation				
Other functions activated				
Relay 1 function				
Relay 2 function				
Trending and/or Modbus value activated				
Primary outlet Pt2, T° and PID setting: Pt2				
Delta T Recov setting: PT1-S3 for AlfaPilot / PT1-S2 for SolarFlow				

Volt free Remote contact wired or not

TRIAC 230 V connections wired or not

Other comments:

Identification of the unit:

Unit ID N°	Installer / Company Name	Installation site	Date
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

COMMISSIONING REPORT

Installation

Tightening dimension control	
Air vent position	
Settling Pot presence on primary	
Boiler Brand, installation and power	
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Configuration menu

Sensors			
Pumps			
Solar menu			
Other			
Primary Pumps:	Accept		Accept
Pump 1	0-10V sign:	Pump 2	0-10V sign:
Secondary Pumps:	Accept		Accept
Pump 3	0-10V sign:	Pump 4	0-10V sign:
Electrical bridges control for pumps on power plate			
Pump1	Pump2	Pump3	Pump4
Sensors' switches control			
Pt1	Pt2	S1	S2
		S3	S4
		S5	S6
Control valve working			

Settings

DHW secondary outlet T° setting: S1				
PID setting				
High alarm setting		Manual		Auto
Thermal Treatment		Type	Setting	Time
Efficiency Delta T setting: S3-S2				
Eco function activation				
Booster function activation				
Other functions activated				
Relay 1 function				
Relay 2 function				
Trending and/or Modbus value activated				
Primary outlet Pt2, T° and PID setting: Pt2				
Delta T Recov setting: PT1-S3 for AlfaPilot / PT1-S2 for SolarFlow				

Volt free Remote contact wired or not

TRIAC 230 V connections wired or not

Other comments:

Identification of the unit:

Unit ID N°	Installer / Company Name	Installation site	Date

WARRANTY

Our equipment comes with a 12-month warranty from the date of shipment. This may be extended to 6 months from the date of commissioning of the equipment, subject to commissioning report being mailed to Alfa Laval. The warranty period is limited to 18 months from the actual date of shipment from the factory.

The manufacturer's liability is limited to the replacement of any defective part that cannot be repaired. No other financial compensation may be claimed in any case under the warranty

The nature and probable cause of the defect must be reported to the manufacturer before any action is taken. The defective part should then be returned to our Lentilly factory in France for assessment unless written agreement to proceed otherwise has been obtained from Alfa Laval. The results of the assessment can only state whether or not the terms of the warranty apply

Exclusional factors:

Non-compliance with the guidelines for installation, configuration and maintenance:

Over pressures, water-hammer, scaling, noncompliant water quality

Also excluded from the warranty:

- Fitting costs, refitting costs, packaging, transport, and any accessories or equipment not manufactured by Alfa Laval, which will only be covered by any warranties issued by said third-party manufacturers.
- Any damage caused by connection errors, insufficient protection, misapplication or faulty or careless operations.
- Equipment disassembled or repaired by any other party than Alfa Laval.

Defaulted payment will lead to all operational warranties covering the equipment delivered being terminated.

SPARE PARTS

Only replace any defective part with the **original** spare part. Please contact your local Alfa Laval agency.

HOW TO CONTACT ALFA LAVAL

Our contact details are updated on our website www.alfalaval.com.

